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An Analysis of 1514 Inguinal Herniotomies*

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The group of cases under discussion represents 1514 consecutive operative procedures for cure of indirect and direct inguinal herniae. It is confined to males of the age limits of veterans of the great war. These represent a social type somewhat diferent from that seen in the average private practice in that a far better check up is available and the individual tends in the case of a recurrence to return to the bureau for reoperation, something which is seen with far less frequency in the private practice of surgery.

ANESTHESIA

The first 371 procedures were done almost exclusively under local anaesthesia with an occasional ether anaesthesia. The last 1,143 were operated under spinal anaesthesia with an occasional local when the other was untra-indicated. We prefer spinal anaesthesia as it gives excellent relaxation, no oedema in the operative field —only a relatively low anaesthesia is necessary—and greatly facilitates the handling of successive cases on the same morning in the operating room.

MORTALITY RATE

There was one death in the series, that from cerebral hemorrhage in a man who had previously had a hemiplegia.

TERM OF HOSPITALIZATION

All cases are required to remain in bed a minimum of 21 days, in severe cases 28 days.

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PERCENTAGE OF DIFFERENT TYPES OF INGUINAL HERNIAE

		%
Indirect	1,072	70.8
Direct	297	19.6
Sliding (indirect)	5	.3
Strangulated (indirect)	2	.1
Recurrent	138	9.1

By this it is seen that by far the greatest number seen was of the indirect type. That we did not see more strangulated cases is no doubt due to the fact that almost all cases have to come some distance, and there were relatively few in the advanced age group, by far the largest number being between 35 and 50 years of age.

In this same period there were operated 87 ventral, 44 epigastric and 12 femoral herniae. These last are mentioned only to show their relative frequency in the same group of patients in the same period of time.

These 1,514 inguinal herniae represent 3.48 per cent of the 43,429 admissions during this period.

TYPES OF OPERATIVE PROCEDURES

The Bassini type of operation with transplantation of the cord was used throughout. Approximately 50 per cent of the operations were done by one man whose procedure differed from that used by the others only in that he inspected the posterior wall of the canal in all cases and repaired it whenever weak areas were found, removed all cremasteric muscle from the inguinal canal, imbricated the fascia of the external oblique and in most recurrent and all direct cases transplanted

the cord to a subcutaneous position over the internal ring.

Recurrences

One hundred and thirty-eight recurrent inguinal herniae were operated, 24 were on individuals that had previously been operated in the institution as a part of the series under discussion, a known recurrence rate of 1.54 per cent plus. Twenty-one of these, 1.3 per cent, were operated by those not taking care to repair the posterior wall of the canal and follow the other procedure described above. Four, or .2 per cent, recurred in about 50 per cent of these cases that these procedures were used in.

Description of Procedures

Indirect Inguinal Hernia. The canal is exposed in the usual way by splitting the fascia of the external oblique. The cremasteric muscle is thus opened and all of this lying in the inguinal canal is removed. Next the sac is isolated, ligated high, removed, and the neck transplanted beneath the internal oblique muscle. All extra peritoneal fat, when present, is removed from the upper portion of the canal. Following this the posterior wall of the canal is examined and where any weak places are found in the transversalis fascia, this is dissected out and overlapped, care being taken to always reduce the internal ring to the smallest size to safely carry the cord elements. The b o r d e r of the internal oblique and the conjoined tendon is then sutured by interrupted sutures to Poupart's ligament behind the cord followed by overlapping of the fascia of the external oblique by a double row of interrupted s u t u r e s, the cord coming out t h r o u g h the reduced external inguinal ring.

Direct Inguinal Hernia. The repair of the direct type of inguinal hernia is carried out in the same way with the following variations. The fascial covering of the sac is carefully defined and dissected off the sac and the sac is invaginated by one or more purse string sutures. The borders of the dissected transversalis fascia are thus overlapped by a double row of interrupted sutures and the cord transplanted by being brought out the reconstructed internal ring where the fascia of the external oblique muscle has been imbricated medially, thus placing the cord in a subcutaneous position. Then the external ring may be completely closed.

Recurrent Herniae. The same principle of disposing of the cord is used in these as in the management of direct herniae. Care is taken in all repairs to do away with abnormal relaxations, to refrain from injury to the ilio-inguinal and ilio-hypogastric nerves, and not to include them in any sutures. Occasionally there is too much tension of the fascia of the external oblique muscle and when this occurs we prefer to make a longitudinal incision through the fascia over the rectus medial to the repair.

We have not as yet had to have recourse to the Galli type of suture for the repair of any hernia, and have operated all cases unless right of domicile had been forfeited by the hernial contents of the general condition of the patient made operation inadvisable or too dangerous.

Sutures

In this series c a t g u t has been used throughout.

Local Complications

There have been a few superficial wound infections, none have led to a recurrence.

In one case a cord and testicle became gangrenous and had to be removed but the hernial repair held.

Occasionally there has been oozing in the upper part of the s u t u r e s but this has never been a serious complication.

The bladder was injured in one case, immediately repaired, no sequellae.

Undescended Testicle

Now and then an undescended testicle is found complicating the hernia. These, if they appear normal, are usually placed within the abdomen and a tight closure made. If there is any question of neoplasm, the testicle is removed.

In this series there were found two malignant tumors in intra-abdominal testes. No case of epididymitis has been noted associated with an undescended testicle, nor have we ever seen one.

We have been particularly interested in operating recurrent inguinal herniae in trying to ascertain why that certain hernia recurred and we believe repair of the posterior wall, reduction in the size of the internal ring, removal of the cremasteric

muscle, and in certain cases the transferring of the cord into a subcutaneous position over the internal ring in addition to the usual Bassini procedure, will greatly reduce recurrences. At least analysis of this series of cases tends to emphasize that possibility. It is not unusual to operate a recurrent hernia and find little evidence that the case had ever been operated before. Such cases we feel sure had little done other than removal of the sac and a simple closure.

When we realize that some 50 per cent of individuals have a preformed indirect hernial sac of some degree, it is little wonder that "rupture" or clinical inguinal hernia is so common as to be almost a social problem, especially as it is a disqualifying defect for employment. Heredity must play a part as it is not unusual to have h e r n i a in successive generations of the same family.

An individual is often turned down for employment because of enlarged external rings, on the grounds that he may have a potential hernia. This may be true so far as direct hernia is concerned. Our experience shows that with each decade the percentage of direct herniae increases. But we doubt seriously if the ordinary enlarged external ring alone has anything to do with the development of an indirect hernia as its occurrence depends upon a preformed sac, a large or relaxed internal ring and ample space in the inguinal canal.

In conclusion, let me suggest that in the repair of inguinal herniae, that in addition to the removal of the sac that each layer be made as intact as possible and all spaces be made as fibrotic as possible. If this last were not true the injection treatment would in no way succeed.

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DISCUSSION

Dr. H. C. Weber, Bartlesville: Most of the hernias which I do are industrial hernias. Up in our part of the country we have not accepted spinal anesthesia. We do practically all under ether, local, or nitrous oxide. I think perhaps the cause of a lot of failures with local anesthesia that a great many people have is due to the fact that they don't inject their anesthetic deep enough. They get it into the fascia and expect that to hold from pain, when the nerves are much deeper than that. I always try to get my anesthesia as deep as I can get it without going into the peritoneal cavity. Occasionally I find one who does not want a local, and those you can do under nitrous oxide.

So far we have had no deaths from simple hernia. I had a death a month or two ago in a case of strangulated hernia. A woman came to the hospital who had had this hernia out for four days; on the fourth d a y h e r f a m i l y put her in a car and brought her 300 miles from Kansas. The hernia was as large as your fist and it was becoming considerably inflamed. I operated her and it was necessary to resect about a foot or two of the ileum, and she did not get along very well, and on the third day she died of an embolus. The peculiar part of this case was that the hernia had been out that long, and this w o m a n was apparently not very sick. There was no rise in temperature and her p u l s e was good. She had no vomiting. You could hardly believe it to be as serious as it was.

About the length of time in the hospital, insurance companies don't want them to stay longer than they have to. I make it a rule to keep them two weeks and then let them go home. I would like to keep them all three weeks, but I can't do it.

As to sutures, I use continuous suture m o s t l y rather than interrupted. The most men use interrupted sutures, but I never knew of any of them giving way on that a c c o u n t. I think there are three points of importance—isolate the sac, ligate it high enough, and close the internal ring around the cord both above and below as tightly as you can get it without strangulation, and proper closure of the muscle to Poupart's ligament, and then I think you have accomplished all anybody can.

This thing Dr. Fite brought out about examination for employment is valuable to anybody who does a lot of examinations. Perhaps a large external ring is not a potential hernia, but in a good many cases where they have a large external ring, we find them coming in with hernia. It is a bad thing to have to turn them down, but you have to do it. I believe that is all I have to say.

Dr. F. L. Flack, Tulsa: Most of the recurrences of inguinal hernia that I have seen have been in the external ring or the subcutaneous layer, and I think that one point of value is to close the external ring. You can transplant the cord clear up on top of the fascia, but you can close the psoas inguinalis tightly down under the cord and there is no danger of compressing the cord, because of course the cord is on top. In regard to suturing the conjoin tendons or your Poupart's ligament so that there will be fibrosis of the sac, that requires about two weeks and 20-day chromic catgut will last 10 days or two weeks. The principal advantage in using Galli sutures or fascia sutures, would be the saving of the price of a tube of catgut. Another thing to look for is when you get the sac out and open it up is to see if you haven't another sac. You may have sometimes two sacs, and that accounts for some recurrences. The sutures must be tied tightly enough to produce some strangulation of the conjoin tendon to produce this myositis and make the thing hold.

Dr. A. Ray Wiley: I enjoyed this paper very much indeed for several reasons. Most of my work has been in the industrial field, the same as Dr. Fite's and Dr. Weber's. I have very little to add to what has been said. Dr. Fite has covered the field very well. A few points might be somewhat worthwhile. I believe in what both Dr. Fite and Dr. Weber have said. Dr. Weber remarked that local anesthesia sometimes, not in his experience but in some cases, had not been sufficient. If you make your local injection correctly you will get a nice anesthetic clear down through to the peritoneum.

In closing the fascia, I have been very careful where you have the congenital type of hernia extending into the tunica vaginalis not to close or tie off the lower sac. Excise your sac, but leave that opening into the tunica opening, otherwise you will almost certainly get a hydrocele.

I had a very interesting case recently. This patient was operated in Texas by a very good man. He had a recurrence. In the previous operation the interrupted sutures were of black silk so that every stitch showed distinctly. The hernia had not recurred in the line of suture, but to one side.

I think this subject has been very well covered.

Dr. Woolsey, St. Louis: Mr. Chairman, it looks like Wiley put me on the spot. I was unfortunate in being so far away from the kitchen that I was late with my lunch and did not get to hear the paper. I don't know why he mentioned my name. I am a guest, living up on the Mississippi river.

I have had something to do with hernias, and the most important thing I have to say is that a hernia is the result of a poster anatomical wall defect of the inguinal canal. You talk about lifting and other things, but you are not going to get an inguinal hernia unless you have direct violence to the point of hernia, and it will follow immediately. A lot of people have hernias for many years before they are aware of it, and they find it accidentally. As far as traumatic hernia is concerned, our state laws, our compensation laws, etc., the majority of them are wrong in figuring that lifting, etc., causes hernia. When you find the wrestler, the strong man in the circus, etc., without hernia you will know that the anatomical wall if properly made is greatly in excess of any exertion.

As far as the repair of the hernia, back in 1920 I became convinced that white meat would not grow to red meat, and I devised an operation of my own which I have followed since that time. I reported it in 1925 in Dallas, and just before I reported it, Major Selig of St. Louis, after having gotten my idea on fascia to muscle suture, made extensive investigations on rats, etc., and wrote an article for the American Surgical Society to the effect that the fascia would not grow to muscle. In my operation I put three layers of fascia under the cord. Bassini is responsible for the first really proper idea in hernia operation, and with these three layers I have been criticized on the grounds that there might be trauma to the cord, but one can readily see that your trauma to the cord would have to be over the pubes and that part of it hasn't been disturbed in this operation. The most important part in this operation is to carry your substitute suture line not only to the internal ring but above the internal ring, and if you carry it high enough and never put a suture in that

first line of sutures above your internal ring, because you will get a constriction atropy and get into trouble. Your suture line should go a little above the internal ring.

In direct hernia the inguinal canal has nothing to do with direct hernia, and if it has nothing to do with it, there must be a weak posterior wall. Now with that so, and with the internal ring having the inguinal hernia appear through the internal ring is a weak canal wall too, so that all operations should be the same. The first thing to do is to properly repair the internal ring, the posterior canal wall. If that is properly done you will not get recurrences. In the old operations we had the most recurrences in the direct hernia. In the operation that I have used, I have not seen a recurrence in direct hernia. The only hernia that I have seen recur—and that had very few recurrences—is that of the internal ring and it is either because the posterior canal wall was not carried high enough or the top suture is broken by coughing, or the conjoin tied, or something of that kind. I use in my first line No. 1 20-day double catgut and I have the knots so that the knots are all outside the fascia. Since 1925 when I reported the operation I have had five recurrences in over 700 cases. In my particular work I am more apt to get the recurrences than the majority of surgeons. If a person is operated by a surgeon and gets a recurrence, he is pretty apt to go to some other surgeon to get repair. In my work, railroad work, I feel more apt to get the recurrences than the majority of surgeons.

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CONCLUSION

Dr. Fite: I think we are all agreed that one of the essential things in closure is repair of the posterior wall, and the comparative figures in this paper go to show that that is at least a significant thing, because one-half of these 1,500 cases were done without any particular attention to the posterior wall, the other half with a great deal, and there were seven times as many recurrences in the first group as in the second. In the first group there were 21, and in the second group three recurrences.

Like Dr. Woolsey we are able to follow our cases pretty well for the reason that they come back to get it done for nothing. That is one of the first things, and the bureau has a pretty good follow-up, so that we are fairly accurate in the number of recurrences that we have. No private cases were included in these cases at all, because we realized that we cannot follow these and we don't know how many recurrences we might have, and any figures we might get up would be wide of the mark.

But this subject of hernia in our present industrial life is made important, and it behooves us to see that we operate them and get good results. From the standpoint of insurance companies, if the hernia occurs during the time of employment, if it does not recur, the man can get a position. I haven't any figures to show on it, but the incidence of chronic hernia is about one in 15. I know it is pretty high. I do know at the average examination there is a preformed sac in at least 50 per cent of all individuals. If there is a preformed sac in 50 per cent, it is not strange that one in 15 should develop a hernia.

I appreciate the remarks you gentlemen have made. I believe we all know what we should do. If we can cut down our recurrences we have done something for the problem.

Corpus Luteum Hormone in Early Pregnancy: Report of Case in Which There Was Early Removal of Corpus Luteum

Using the gravimetric method of Venning, Howard W. Jones and Paul G. Weil, Baltimore (Journal A.M.A., August 6, 1938), studied the excretion of pregnanediol in a case of early pregnancy in which the corpus luteum of pregnancy was removed 58 days after the last menstrual period. Abortion did not take place. Following this operation, the daily urinary content of pregnanediol, an excretion product of progesterone, was determined. Progesterone is probably produced by the placenta, beginning, in this case at least, at about the end of the second month.

The Treatment of Addison's Disease

Edward H. Rynearson, Rochester, Minn. (Journal A.M.A., September 3, 1938), discusses the treatment of Addison's disease by presenting hypothetic case histories, which include the patient in a crisis of Addison's disease, the patient with Addison's disease who requires an operation, the patient with chronic Addison's disease and the patient suspected of having Addison's disease. Progress in the treatment of Addison's disease is being reported and it is believed that the best available treatment should consist in (1) the restriction of potassium in the diet, (2) the addition of sodium salts to the diet, (3) the use of an active extract of the adrenal cortex when it is needed, (4) the training of the physician and the patient in the details of treatment of the chronic state of the disease and (5) the early recognition of acute remissions and their energetic treatment.

Surgical Diseases of Gallbladder and Bile Ducts

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The biliary system attracts the attention of the surgeon largely because of inflammatory processes and the results of inflammation. Anomalies, tumors, traumatic injuries, parasitic and other lesions are of much less importance to the clinical surgeon.

The symptoms are frequently of slow insidious onset, so that the patient is unable to fix an exact date for their beginning. A sensation of fullness and distension, vague epigastric discomfort and distress, eructation of gas, increase of discomfort to the point of actual epigastric or right upper quadrant pain often mark the course of the malady, until the patient finally seeks relief. Other cases present a sudden dramatic attack, usually after a period of years of milder distress. The attacks, the well known gallbladder or cystic duct syndrome, are said to begin suddenly, often at night, following the eating of a heavy meal. The pain is epigastric or in the right hypochondrium, radiating to the right scapular and interscapular region. Nausea and vomiting may occur. Localized tenderness over the gallbladder area, below the ninth costal cartilage becomes manifest. Murphy's first percussion sign may be elicited. There is little disturbance of the pulse or temperature early.

There are not to be found the agonizing pain of acute pancreatitis, the board-like rigidity of perforating ulcer, the posterior tenderness of acute kidney lesions, the fall in blood pressure of coronary thrombosis, the fever and dyspnoea of pulmonary lesions. Early in an attack, acute appendicitis may mimic a gallbladder syndrome with considerable fidelity. Relief of the pain and spasm by use of an opiate terminates the attack and after a few days the patient resumes her customary routine.

If the inflammation becomes severe, seriously compromising the gallbladder wall with suppuration or gangrene, the story becomes prolonged. We have fever, prostration, anorexia and persistent pain and tenderness, with or without the development of a palpable mass. The process may then subside, be terminated by surgery or result in rupture of the gallbladder either into the peritoneal cavity or an adjacent viscus.

When a stone establishes its residence in the common bile duct, a new train of symptoms develops. Intermittent fever with chills and sepsis, with or without pain may be present. If the common duct is completely blocked jaundice becomes evident. This jaundice varies in intensity, develops rapidly and subsides quickly. There may be more than one attack. Thus it differs from the jaundice of malignancy which is progressive, never fades and becomes deeper and darker as the weeks pass.

The diagnosis is to be made from consideration of history, elimination of other possible causes of epigastric and upper right abdominal pain by physical examination, X-ray examination, including the dye, electro-cardiograph when necessary, and the standard laboratory procedures. It is somewhat useful and interesting to have an icterus index and van den Bergh test made. The bleeding time is quite important in jaundiced cases.

In selecting cases for operation who present vague atypical symptoms, with few physical findings, we must be careful not to include the neuroses and the patients with functional digestive disorders. Certain neurologic cases may present deceptive findings. The interpretation of the films of the gallbladder must be made with care. When the findings are not distinct and positive, it is wise to wait awhile and repeat the tests.

The preparatory treatment for operation includes the administration of abundant fluids, citrus fruit juices, glucose intravenously and blood matching for donors. A bed rest period is useful for many pa-

tients. The frequent and judicious use of consultants is a distinct aid in lowering morbidity and perhaps mortality.

The choice of anesthesia depends upon circumstances and individual peculiarities of patient, surgeon and anesthetist. We frequently use spinal.

A transverse incision has been quite satisfactory to us, giving good exposure, closing easily, producing sound scars and few hernias. Technique of various procedures upon the gallbladder and ducts is too well known to consume your time describing it.

A Case of Actinomycosis in Man

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Cases of actinomycosis in man, although not extremely rare, are not frequent enough to make us very familiar with the clinical picture. We are very likely to overlook the diagnosis, if the condition is not suspected and special methods used in making the laboratory examination of pus. The diagnosis is confirmed by the finding of the "sulphur" granules, which float in the pus as small pinhead, or smaller size white or light yellow, particles and which have, on microscopic examination, the characteristic ray-like fungus appearance. Although such a positive finding might be considered essential for a definite diagnosis, it must, as always, be considered only as one factor in the whole clinical picture of the case.

The other laboratory findings in the ordinary case are not especially distinctive and are what you might expect in any infection.

Blood: The white blood count runs from 13,000 to 17,000, with a tendency to the higher count if a severe secondary infection has taken place. The differential count is from 80 per cent to 90 per cent polymorphonuclears. As the condition progresses, a secondary anemia of more or less severity develops, the red cells dropping to 3,000,000 or below with a proportionate decrease in the hemoglobin.

Urine: No characteristic findings occur in the urine. If the case is quite acute with considerable fever and general toxemia, a slight amount of albumen, often with hyaline and granular casts, will be found.

Pus from lesion: It is the appearance of this pus and the discovery in it of the small, so-called "sulphur" granules that often first brings the thought of actinomycosis to one's mind. Microscopic examination of this pus and especially of the "sulphur" granules, if they show the ray fungus, confirms the diagnosis. The ray fungus, if examined properly, is quite distinctive, but can be easily overlooked. Too heavy crushing of the granules will destroy their typical ray-like form. We have found that just the weight of the cover-glass alone, or possibly with the very slightest pressure on it, is sufficient and makes the best preparations. Examination is made of wet preparations, unstained, using a subdued light. Stained preparations, both with simple stains and Gram's are made and add to the findings but are not entirely satisfactory by themselves.

The infection is a chronic condition which is due to the invasion and growth of the ray fungus (Actinomyces Bovis), a microscopic parasitic plant that causes "lumpy jaw" in cattle. It is considered that the infection usually enters the body through the mouth, from which location it is carried to other portions of the body, most frequently to the neck, intestines or lungs. These three most common sites for the spread of the infection give rise to the three clinical types of the disease that are recognized in man.

1. *Cervico-facial*: This probably is the most frequent type and carries a mortality of around 25 per cent. In it, the submaxillary region on one side of the throat becomes swollen, hard and indurated. The jaw soon becomes enlarged and tender. Later, multiple abscesses form and numerous sinuses discharge a thick, mucoid bloody pus, in which can be seen the small "sulphur" granules. There may be a slight septic type of fever in the more acute or extensively involved cases. Often the other side of the jaw, as well as the tongue, may become involved.

2. *Abdominal*: This is the second most frequent type and gives a mortality of around 50 per cent. Any organ in the abdomen may be affected, but some part of the gastro-intestinal tract is more often primarily involved. As would be expected, during the time the gastro-intestinal tract is the system primarily attacked, the symptoms will be those referable to it such as nausea, vomiting, diarrhea, etc. As soon as the infection gets outside of the digestive tract, the organs and structures then involved give the most prominent symptoms. Sooner or later, the infection works its way through the abdominal wall and appears on the external surface of the body, first as a hard indurated painful swelling which soon breaks down and discharges, usually through multiple sinuses, a characteristic pus in which the "sulphur" granules can be seen. Even while this drainage is going on, the pus burrows its way in other directions and penetrates any structure that comes in its way. It may go through into the pleural cavity, or even through the vertebrae into the spinal canal. A frequent route for infection in the lower abdomen is down the ilio-psoas muscle into the thigh.

3. *Pulmonary*: This type is the least frequent, but it has the highest mortality, about 80 per cent or higher. The symptoms are those referable to a chronic infection of the lungs, cough, some fever, varying quantities of thick sputum, either purulent or muco-purulent, often bloody. The "sulphur" granules can usually be found in the sputum, but often the case goes on to an extension through the chest wall and the escape of pus through the skin, before a diagnosis is established.

We are permitted to report the following case through the courtesy of Dr. G. H. Kimball, Oklahoma City, under whose care he was while in the hospital, and at the time the diagnosis was made: Mr. B. F., age 36 years, white, male, married, oil field worker, was admitted to Wesley Hospital, 3-31-38, complaining of pain and tenderness in lower right rectus muscle, with some burning on urination and nocturnal frequency. He gave a history of having received a slight trauma to the front of his abdomen, 1-6-38, which was some four months previous to his entry into the hospital. He was working with a grader at the time and was pushed aside more than actually being struck by it. At least, it was not severe enough to cause him to stop work at the time. A few days later, however, he did stop work and was seen by his family physician who treated him a little and he soon returned to work. Then, after a short time, he was forced to stop work a second time. This was on or about 3-8-38, some three weeks before his admission to the hospital. On entering the hospital, his physical examination was essentially negative except for a tender area at the median edge of the right rectus muscle just above the pelvis, and a slight daily temperature. Laboratory findings: Blood, W.B.C., 13,300-16,800 per cu. mm. Diff. Ct.—80 per cent to 90 per cent polymorphonuclears. R.B.C.—4,100,000-3,300,000 per cu. mm. Hb—54 per cent to 60 per cent. Wassermann and Kline—negative. Urine—Normal, except for a slight trace of albumen.

Several possible diagnoses were discussed, chronic appendix, ruptured appendix, with walled-off abscess, incarcerated right inguinal hernia, infected hematoma of the right rectus muscle, acute myositis of right rectus, even malingering was mentioned. On 4-8-38, the lesion was incised and dissected. A small amount of pus escaped from a small mass underneath the right rectus. The surrounding tissue was quite firm and fibrous. Microscopic examination of this tissue showed only chronic inflammation. There was no microscopic evidence of T.B., syphilis, or malignancy of the tissue. Actinomycosis was not suspected at this time and was not picked up.

At the time of the operation, a small sinus was found extending down towards

the right psoas muscle, but it was not completely explored. On 4-16-38, the drainage material from the operative wound was described as very foul and fecal in character. His general condition seemed improved and the patient was allowed to leave the hospital on 4-22-38, with the wound draining freely. The wound did not heal, but continued to drain the fecal-like pus while at home. At this time also the pain and "drawing-up" of his right thigh increased, so that he had to use crutches to get around. He was re-admitted to the hospital on 5-21-38, X-ray examination of kidneys and colon gave no additional information as to the cause of the condition. The patient had developed symptoms of a general sepsis with marked anemia. He was given two or more blood transfusions, which seemed to benefit him a great deal.

On 6-1-38, a second abdominal operation was done and the appendix removed, which was reported as about normal length, but thick-walled with some adhesions to its surface. It was a chronic, rather than an acute appendix. There was not found any special amount of adhesions or walled-off abscess or abscess wall, so it was thought that the original condition could not have been a ruptured appendix, which was one of the possibilities discussed at first.

This second incision continued to drain and did not heal so that now there were two draining wounds. The right leg, by this time, was rather acutely drawn up and flexed at the hip and knee joints, and there was apparent danger of at least partial ankylosis, if not firm fixation, in this crippling position, so the leg was forcibly extended and put in a cast.

On 6-28-38, a third operation was performed, the two incisions being re-opened widely and packed open and the right leg straightened and fixed in an extended position by a cast. On 7-6-38, some of the pus from the wound was sent to the laboratory for culture and microscopic examination, but only the ordinary pyogenic organisms found. Actinomycosis was still not thought of. After the sinuses had been partially occluded for a day or two with lessened drainage, on 7-25-38 a large amount of pus escaped when the dressing was changed, and Doctor Robert Choice, the interne on the case, noticed many small yellowish-white granules floating in it. Smears of this pus were sent to the laboratory with the request to examine for Actinomyces, but only pus cells and the ordinary pyogenic bacteria were found in the stained preparations. Unstained preparations of the crushed "sulphur" granules did not show the ray fungus, for the reason, we believe, that too much pressure was put on the cover-glass and the typical arrangement of the rays destroyed. The next day, additional specimens were taken at the bedside, in the unstained preparations the cover-glass was allowed simply to settle down on the pus by its weight alone, and when examination in a subdued light, the characteristic rays, with bulbous ends and coccal and bacillary forms in the center of the granules were definitely identified.

As soon as the diagnosis was established, the patient was put on K.I. by mouth and sodium iodide intravenously. Later, he was given thymol, also sulphanilimide. Although the patient seems much improved physically, and is running very little fever, on 8-25-38 a new abscess down below Poupart's ligament on the inner side of the upper part of the right thigh ruptured and drained. The two former sinuses seem to be healing slowly.

We are unable to give the final outcome of this case because the patient is still under treatment in the hospital. We can say, however, that he is much better, physically, and the prognosis seems much more favorable than at the time the diagnosis was established. The treatment instituted apparently has had a beneficial effect up to this time.

Conclusions

Here is a case of actinomycosis of the lower part of the abdominal wall in a man who gives the history of having had an injury to that part of the body some three or four months before. He was working for an oil company at the time, so there is the question of compensation in this case. The location of the lesion is at or near the site of the alleged injury, but at the same time, is in one of the three most frequent locations in which the disease is found, when the infection enters through the mouth. We also must remember that cases can develop through trauma, the infection being introduced through a wound

with the entrance of a foreign body. Most authors do not consider the condition contagious. The finding of the fungus in the tonsillar crypts and in the cavities of decayed teeth has been reported in the literature. These must, therefore, be considered as possible foci for infection. In some cases, it will be most difficult and at times impossible to decide the exact route of infection. If the infection entered through the mouth and passed through the wall of the intestines before reaching the abdominal wall, there should be some extensive peritoneal adhesions, but none were reported as having been found at the time the appendix was removed.

SUMMARY

A case of actinomycosis in man is reported in which the diagnosis was not established until late in the course of the disease. The inadequacy of the ordinary routine methods of examining the pus from these cases in the laboratory is pointed out. The fact that the condition must be suspected, and special laboratory technique used in examination of the pus, is emphasized. The possible routes of invasion are discussed.

Thoracoplasty in the Treatment of Tuberculosis*

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The purpose of this paper is to demonstrate by a case presentation selected from our files the place for thoracoplasty in the course of treatment and cure of tuberculosis. No one method used can usually be considered a cure within itself. It is a combination of methods, each being used as indicated and deemed advisable for a permanent cure.

In the treatment of tuberculosis every method of treatment and means of cure should be used to return a patient to a useful life, a permanent cure, and to prevent the spread of the disease as soon and as permanently as possible.

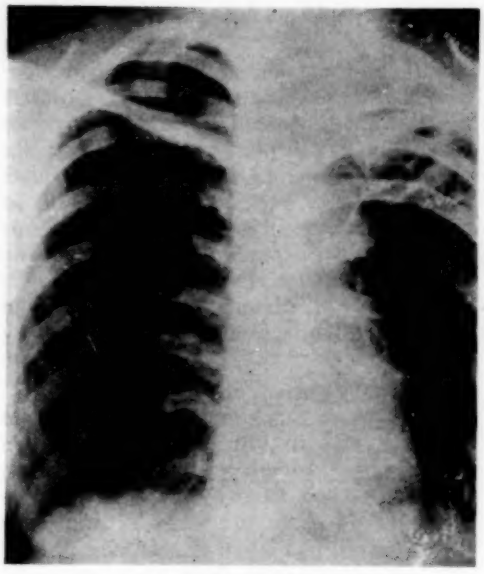
Tuberculosis is a local disease with systemic manifestations. The attack on the lungs by the infection causes a lowering of the red blood cells, hemoglobin and general resistance of all the organs of the body. Tuberculosis is not primarily a surgical disease, but often it is necessary to resort to surgery to r e d u c e the constitutional symptoms as well as to produce a permanent cure of the local infection.

No two clinics or clinicians use the same technique or method in arriving at their end results, so the phthisilogoist and surgeon should carefully weigh each case for the best method to pursue for the best results. Statistics will not give one the results and working knowledge that the study of each patient will give. Therefore, when thoracoplasty is decided upon as the surgical method indicated in any particular case to c o n t r o l the symptoms such as cough, expectoration, fever, and loss of weight, the patient must be prepared for the operation by a complete study of the blood and all the organs, their functions and reaction to the strain which will be thrown upon them by the operation. A study must also be made as to the extent of the lesion and its location to determine the number of stages of operation and the extent of the operation to be done.

Thoracoplasty is the only method whereby the lung is completely immobilized. In pneumothorax collapse of the lung there is some expansion of the lung tissue on inspiration regardless of the degree of collapse. This can easily be demonstrated by X-raying a patient with pneumothorax on deep inspiration and then again on deep expiration.

In performing the operation of thoracoplasty which we are discussing today, it must be so timed, judged and performed as to avoid any future complications.

*Read before the Medical Section, Annual Meeting, State Medical Association at Muskogee, Oklahoma, May 10, 1938.



Cut Number One

This particular case presented is a typical illustration of using the necessary methods of treatment when indicated and was so timed and completed for ideal results.

Female, 32 years old, appears for examination January 28, 1937, complaining of cough, expectoration, blood streaked sputum and fever over a few weeks' duration. Previous history recalls that the patient was examined and X-rayed in August, 1931, which showed a tuberculous involvement in the upper lobe of the left lung. No treatment more than bed rest was advised and carried out. Then she was examined and X-rayed again in August, 1936, which still showed an active process in the upper lobe of the left lung. When she appeared for examination in January, 1937, (See Cut No. 1) there was active tuberculosis in the upper lobe of her left lung with small cavitation. At this time she was put to absolute bed rest for observation to determine the method of treatment.

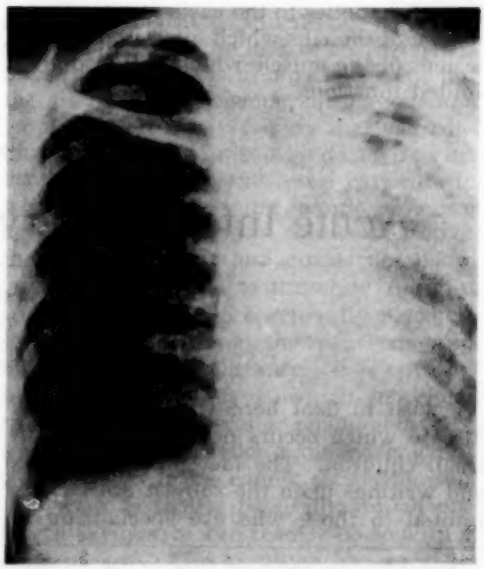
On February 22, 1937, this patient developed influenza and was sent to the hospital where she remained very sick for two weeks. After this the X-ray (See Cut No. 2) showed marked extension of the tuberculosis in the left lung. Pneumothorax was administered, 15 treatments being given, but because of massive adhesions only a partial collapse was obtained. Cough, expectoration and fever continued with positive sputum. Pneumothorax was discontinued in July, 1937, (See Cut No. 3) and thoracoplasty recommended because at this time there was very little air space in the pleural cavity.

The first stage thoracoplasty was done July 22, 1937, the upper four ribs being removed from the vertebral junction to near the costa-cartilaginous junction. The second stage was done August 9th, the next six ribs being removed from the vertebral junction to near the costa-cartilaginous junction.

This patient made an uneventful recovery and gained weight from 112 to a present weight of 150. Very little cough, expectoration and fever remained after the first stage of the operation and completely subsided after the last operation (See Cut No. 4). She has had no symptoms since.

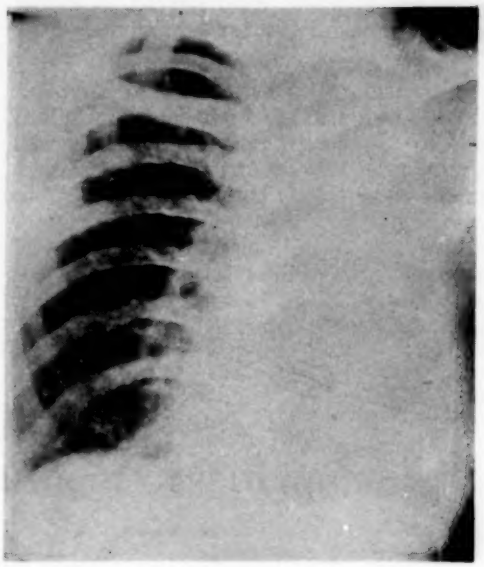
I wish to emphasize at this point that a thoracoplasty should not be done as long as there is a large quantity of air in the pleural space because you realize the ribs will re-ossify in a few weeks' time and the air will continue to be absorbed, which will leave a portion of uncollapsed lung which may cause serious trouble in the future.

I also wish to emphasize the importance of removing as much of each rib as possible



Cut Number Two

Cut Number Three



Cut Number Four

in order to collapse the entire lung. If much of the ribs is left near the vertebral body or near the sternum, there is some danger of having some uncollapsed lung area. Furthermore, these short pieces of para-vertebral rib remaining may cause pain by pressure on the inter-costal nerves and some immobilization of the shoulder, which in the future may develop diminished usefulness of the shoulder and arm. That also applies to the costa-cartilaginous portion of the ribs which may produce adhesions of the muscle which will also give limited functions.

The efficacy of the results of any method of treatment and particularly thoracoplasty is judged by the immediate abatement of symptoms such as fever, cough and expectoration together with a negative sputum.

When the operation is complete and the patient leaves the hospital, the cure is even yet not complete and there should be no let up in medical supervision and medical care to put the patient back to social and economic well being for all time to come.

Acute Infective Laryngotracheobronchitis*

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I wish to deal here with a dangerous disease which occurs not uncommonly in small children. The fact that discussions and writings upon the subject are largely limited to those who are specializing in otolaryngology leads one to fear that the pediatrician and family physician know too little about it. And still it is we of the latter groups who first see such cases; and upon us rests the responsibility for recognizing the true condition and seeing that proper medical service is rendered. The symptoms, diagnosis and treatment will be

*Read Before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, Oklahoma, May 11, 1938.

briefly dealt with and an illustrative case report presented.

According to Chevalier Jackson[1], Blaud[2] first described the condition in 1823; but we are indebted to Jackson[3,4] himself, for much of our present day knowledge of it. Baum[5] discussed the endoscopic findings in 1924 and later reported 24 cases[6]. Gittins[7] reported 14 cases in 1926 and is the author of subsequent papers dealing with it[8,9]. Reference to several articles which have appeared in print during the past 15 years, will be found in the bibliography which follows[10,39].

It can be said of the disease that it is infectious and contagious and occurs sporadically and epidemically throughout most parts of the country during the colder months. While the most typical and severe form is seen in children under three, it can occur at any age. Davis[40] reports a fatal case in an adult and Gittens[8] had one that recovered. The onset is apt to be insidious and to appear in the guise of a common cold with a later development of hoarseness and croup. The fulminating type of case may come on more rapidly, accompanied by high fever and prostration with a quickly developing dyspnoea. I have seen two cases which followed the bronchoscopic removal of vegetable foreign bodies and Gittins[8] had three such instances in his series. The onset sometimes occurs in the middle of the night and simulates spasmodic croup. When first seen most of these children have considerable dyspnoea, a croupy cough and are restless. The degree of temperature varies but may not be very high. One is often at a loss to reconcile the rather striking symptoms with the few physical findings. The lungs are usually resonant but moist rales may be heard over the entire chest. The throat is congested and the ear drums may be reddened.

The dyspnoea grows progressively worse, the difficulty being largely inspiratory. Cyanosis may become apparent but instead of this, the more severe cases often have an ashen gray color. There is retraction at the suprasternal spaces and the epigastrium. Many cases develop a wheeze with stridor. Mucous plugs may occlude portions of the tracheobronchial tree and produce evidence of atelectasis over corresponding parts of the lung. Due to anoxemia the fever may be low until a tracheotomy is done and then it may be greatly elevated. The progressively increasing dyspnoea is apt to become so marked as to rapidly exhaust what reserve strength there might be. In due time the inflammation extends well throughout the tracheobronchial tree. Some of the milder cases will go on to recovery in a few days without operative interference while the severe ones will succumb unless a tracheotomy is done without too much delay. The mortality in the severe type is generally about 50 per cent. Gittins thinks that many cases of bronchiectasis seen in later life may be the result of fibrosis and dilatation of the bronchi following this disease.

On seeing such a case one is apt to experience considerable uneasiness before making a final diagnosis. The possibility of (1) asthma, (2) foreign body aspiration, (3) bronchopneumonia, (4) enlarged thymus and (5) laryngeal diphtheria must usually be considered. Absence of the typical expiratory difficulty and the characteristic musical rales eliminates asthma. In the condition under discussion there is dificulty with both inspiration and expiration but it is usually greater with inspiration. Moist rales may be heard over the entire chest but not the peculiar musical variety belonging to asthma. Absence of a history of a sudden attack of coughing and strangling helps to rule out a foreign body. This, with the lack of characteristic physical findings, is usually sufficient but the aid of the roentgenogram may also be employed. It is my feeling that the condition is often erroneously diagnosed bronchopneumonia and more particularly when it occurs in young infants. We are helped by noting the fact that retraction of the supraclavicular and epigastric spaces is out of proportion to the chest findings and that the lungs are generally resonant throughout. Here, too, the roentgenogram may be of much assistance. It is entirely likely that many cases which live long enough do later develop pneumonia; but early in the course such a diagnosis is apt to be wrong. If one cannot satisfy himself otherwise as to the possibility of an enlarged thymus, he can readily do so with a chest picture. The condition has much in common with laryngeal diphtheria and one

should not be too severely criticized for confusing the two. Certainly, the giving of antitoxin in doubtful cases is a logical procedure. The respiratory difficulty with retraction of the supraclavicular and epigastric spaces is common to both but there is not the same type of hoarseness or aphonia here as in diphtheria. This is because most of the trouble is below the vocal cords and they are not covered by a membrane. There is more evidence of widespread involvement of the tracheobronchial tree than in diphtheria. Examination with the laryngoscope clears up the question quite readily and is an important procedure. The laryngeal mucosa appears red and swollen and may be covered with an exudate which, when wiped off, shows no membrane or ulceration. Smears and cultures can thus be made directly from the larynx.

As yet, no specific organism has been found constantly present. It seems that the bacteria recovered correspond fairly well to what is found in routine throat cultures in ordinary upper respiratory infections with different varieties predominating at different times. Pneumococci and staphylococci are often found and streptococci (both hemolyticus and viridans) are quite frequently reported. It has been suggested that a fliterable virus may some day be discovered as the primary cause.

As was previously stated, the disease is serious and, unless properly dealt with, carries a very high mortality rate. The patient's strength is not only exhausted by the dyspnoea but it is also impaired by the toxemia and anoxemia. Atelectasis of portions of one or both lungs may contribute to the bad outlook with added difficulty from the thick, tenaceous tracheobronchial secretions. At times, there is very little cough reflex. The cardiac muscle, weakened by the toxemia, may be completely exhausted and death ensue from circulatory failure. However, asphyxia is probably the greatest single lethal factor. The ordinary croup remedies are not effective and the oxygen tent is not sufficient to overcome the anoxemia.

Proper management of these cases demands the services of some one who can use a laryngoscope and perform a tracheotomy on a small child. It is often necessary to employ the bronchoscope, as well. First of all, a laryngoscopic examination is necessary in order to make a diagnosis. Through this instrument it can be determined whether or not a diphtheritic membrane is present and the presence or absence of diphtheria can be further verified by smears and cultures taken directly from the larynx or trachea. The severe type of case will be saved only by maintaining the breathing space through a tracheotomy opening. Baum likes to try intubation first but most authorities favor tracheotomy instead. This should be done when marked signs of obstruction are present and should not be delayed until the child is so greatly exhausted or until such destructive changes have taken place in the respiratory center as to prevent recovery. And tracheotomy alone will save very few unless the air passages are kept open by proper after care. This is particularly important because the thick, tenacious secretions continue to accumulate and to form plugs and crusts which not only block the trachea but shut off portions of the lungs aeriated by the smaller bronchi. A suction machine must be available at all times and a competent nurse in attendance. By means of a soft rubber catheter attached to the suction machine the secretions must be cleared out as often as they become troublesome. It is sometimes necessary to first introduce a half dropperful of warm normal saline to soften the crusts. Young and Wautat[41] were successful in actually irrigating the tracheobronchial tree, with injections of from 5 to 10 cc of saline in a two-year-old child. Instillation of a few drops of a 1 to 1,000 solution of epinephrin into a trachea has often been found helpful. At times the bronchoscope may have to be introduced in order to remove obstructing plugs from the bronchi. Warm moist air from a vaporizer both before and following the tracheotomy is very helpful in soothing the irritated mucosa and in helping to prevent the secretions from becoming dessicated. The oxygen tent is also useful where there is continued difficulty with aeration as evidenced by cyanosis. Since dry cold air is irritating and causes dessication, the temperature and humidity should be controlled. There is little indication for drugs. Opiates are dangerous because they depress the respirations, inhibit the cough

reflex and cause retention of secretions. Atropine may contribute to a fatal ending by thickening the secretions. After seeing that the air passages are sufficiently clear for breathing one may quiet the child's restlessness by cautiously giving phenobarbital. The iodides and other expectorants do not seem to be of much practical value and, since they are usually unpalatable, it is generally better to not disturb the child with them. Many of these children do not take liquids well and they all lose much moisture through the rapid respirations. Since dehydration leads to disturbed body chemistry and causes the secretions to be thicker, it is important to give plenty of fluids and electrolytes. In some cases these can be given by mouth but it will often be necessary to give normal saline or Hartmanns solution subcutaneously or intraperitineally. While the child should be disturbed as little as possible, he should be given a thorough examination once daily to determine the condition of the heart and the possibility of such complications as otitis media and pneumonia. Because of the prominent part so often played by the hemolytic streptococcus the question of giving sulfanilamide naturally arises. It has seemed to help in some cases but I do not believe there has been sufficient opportunity to evaluate it.

Case Report

J. K., a 26-month-old white female, was seen because of a croupy cough and difficult breathing of 24 hours' duration. For two or three days preceding this she had had a cold with a moderate coryza and cough. Her twin sister and older brother were just recovering from colds with moderate hoarseness and cough. A cousin, one year of age, had shown symptoms which were similar to those of the patient and which necessitated a tracheotomy three days before. These children had all been in contact with each other. The patient had been troubled with eczema and asthma nearly all her life.

When seen the child was quite restless and had a moderate degree of retraction of the suprasternal, supraclavicular and epigastric spaces. The lungs were resonant throughout but numerous moist rales were heard. The throat was moderately injected. The rectal temperature was 103. A blood count showed: hemoglobin 80 per cent, total erythrocytes 4,000,000, total leucocytes 11,600, polymorphonuclears 43 per cent. She was admitted to the hospital where Dr. J. C. McDonald did an immediate laryngoscopic examination. There was considerable swelling of the laryngeal mucosa with some exudate but no membrane. Cultures taken were later reported as showing no diphtheria bacilli or streptococci. Steam inhalations were begun. She became more restless, the dyspnoea grew more marked and cyanosis developed which was not relieved by oxygen. Finally an ashy gray color developed and the child looked very bad. Dr. McDonald did a tracheotomy under local anesthesia. A moderate amount of dark colored, tenaceous exudate was expelled when the trachea was incised. The color immediately returned to normal and the patient looked quite well. During the next three days it was necessary to repeatedly remove the heavy mucus from the trachea by introducing the catheter attached to a suction machine. The temperature gradually subsided, the breathing became normal and the tracheotomy tube was removed on the fourth day. She made a complete recovery.

Comment

This case is fairly typical of the moderately severe type that will recover with prompt and efficient treatment. She came from a community where there had been other cases; this and the fact that she had been in contact with a relative who had the same condition illustrates the infectious and contagious nature of it.

Summary

Acute infective laryngotracheobronchitis is a dangerous disease of early childhood. The real diagnosis is probably often overlooked. It occurs endemically and epidemically during the cooler months.

For proper treatment it is necessary to secure the services of some one who can use a laryngoscope, do a tracheotomy and, if possible, use a bronchoscope. Among the severer type of cases the mortality will be around 50 per cent.

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1200, North Walker street.

What Every Woman Doesn't Know—How To Give Cod Liver Oil

Some authorities recommend that cod liver oil be given in the morning and at bedtime when the stomach is empty, while others prefer to give it after meals in order not to retard gastric secretion. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. It is most important that the mother administer the oil in a matter-of-fact manner, without apology or expression of sympathy.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silverplated spoon (particularly if the plating is worn), a glass spoon has an advantage.

On account of its higher potency in Vitamins A and D, Mead's Cod Liver Oil Fortified With Percomorph Liver Oil may be given in one-third the ordinary cod liver oil dosage, and is particularly desirable in cases of fat intolerance.

Hodgkin's Disease: Sixty Cases in Which There Were Intrathoracic Lesions: Clinical Lecture at San Francisco Session

C. B. Wright, Minneapolis (Journal A.M.A., Oct. 1, 1938), has reviewed 60 cases of Hodgkin's disease, in all of which, during the period of observation, there were intrathoracic complications; all had been observed long enough so that there was a fairly good clinical history and a physical examination had been made. All the patients had roentgen treatment and were under observation for a considerable period. The patients did not all have intrathoracic lesions on first examination. Some had them then and the rest acquired them later. The intrathoracic lesions are of four varieties: (1) enlargement of the mediastinal glands, (2) involvement of the pulmonary parenchyma, (3) involvement of the pleura and (4) combinations of these regional types. In 57 cases enlarged mediastinal glands were demonstrated roentgenographically. Twenty-one patients had parenchymal involvement, and 18 of these had also enlarged mediastinal glands. Three of these patients had parenchymal lesions only. Seventeen patients had pleural effusion; all of these had mediastinal enlargements. Seven had pleural effusion and involvement of the mediastinal glands. Forty-five of the 60 patients observed were followed until their death. The average duration of life was 40 months. For the 13 patients now living, the average length of the disease is 50 months. Seven of these patients have had the disease 72 months. The majority are in fairly good health. Some are working, and others are in a condition of semi-invalidism. Two patients were lost track of. An attempt was made to estimate the length of life after the onset of intrathoracic complications. In some cases there were in addition other complications. In the 39 cases in which this estimate could be made, the average survival period was 23 months.

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EDITORIAL

SOUTHERN MEDICAL ASSOCIATION

TO ALL PHYSICIANS OF OKLAHOMA:

The Southern Medical Association, with a membership recruited from all over the South, will hold its thirty-second annual meeting in Oklahoma City on Tuesday, Wednesday, and Thursday, November 15 to 18, 1938. This Association is unique in that its scientific exhibits feature the work of individuals and not of institutions. In other words, the Southern Medical Association exists for the individual doctor and not for any group, faculty, department or association. Exhibits this year will consist of subjects demonstrated by means of pictures, motion films, diagrams, and printed placards. The booths will be of uniform construction, and the entire group of exhibits will be well worth the effort of any physician who will take the necessary time to go through them.

The program of the meeting will be divided into 19 different sections covering every field of medicine, both in science and practice. Each section will have its complete program, making a total of more than 600 papers and discussions on various subjects. Meeting simultaneously with the Southern Medical Association will be four or five other national meetings on public health, tropical medicine, etc. The first day's program will consist of 86 papers, each lasting 15 minutes, given by members of the profession in Oklahoma City. All papers will be of a practical nature even when the subject matter is distinctly technical. Specialties covered in this program will include general surgery, eye, ear, nose and throat, traumatic surgery, urological surgery, obstetrics, and gynecology.

Oklahoma City feels distinctly honored to be the host city this year. Previous meetings since 1934 have been held in San Antonio, Texas, St. Louis, Missouri, Baltimore, Maryland, and New Orleans, Louisiana. Never before has it been held in a city as far northwest as Oklahoma City, and it will probably be many years again before such a meeting comes to us. Every physician of Oklahoma is urged to consider himself as a part of the entertainment committee since in reality the Southern Medical Association is the guest of all the physicians of this state. Every member of the State Association should make it his business to be present and do his part in assisting the visitors to find their way around and also to see that they are entertained in a manner fitting this great occasion. Let's do our part and show them that Oklahoma City is a leader among the southern states.

REPORT OF REFERENCE COMMITTEE ON CONSIDERATION OF THE NATIONAL HEALTH PROGRAM

(Adopted at Special Session, House of Delegates, A.M.A., Chicago, September 17, 1938)

(In this editorial you will find a report taken from the minutes of the called meeting of the House of Delegates of the American Medical Association. These conclusions were made after serious deliberation of a Committee of 25 and the report adopted as we hand it to you. We are giving you

this information for two reasons: One, that you may inform the laity as to the cooperation of the medical profession in a plan to increase public health facilities and care for our sick citizenship. Second, that you may prepare to cooperate with this move made by organized medicine as 100 per cent cooperation will be necessary to make it effective.)

Since it is evident that the physicians of this nation, as represented by the members of this House of Delegates convened in special session, favor definite and decisive action now, your committee submits the following for your approval:

1. Under Recommendation I on Expansion of Public Health Services: (1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the president's cabinet. (2) The general principles outlined by the Technical Committee for the expansion of public health and maternal and child health services are approved and the American Medical Association definitely seeks to cooperate in developing efficient and economical ways and means of putting into effect this recommendation. (3) Any expenditure made for the expansion of public health and maternal and child health services should not include the treatment of disease except in so far as this cannot be successfully accomplished through the private practitioner.

2. Under Recommendation II on Expansion of Hospital Facilities: Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

Your committee heartily recommends the approval of the recommendation of the technical committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

3. Under Recommendation III on Medical Care for the Medically Needy: Your committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions, and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population, your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your committee wishes to see established well coordinated programs in the various states in the nation, for improvement of food, housing and the other environmental conditions which have the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the public welfare administrative procedures are simplified and coordinated; and second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "The role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

4. Under Recommendation IV on a General Program of Medical Care: Your committee approves the principle of hospital

service insurance which is being widely adopted throughout the country. It is capable of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

In addition to insurance for hospitalization we believe it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

Your committee recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

5. Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

6. To facilitate the accomplishment of these objectives, your committee recommends that a committee of not more than seven physicians representative of the practicing profession under the chairmanship of Dr. Irvin Abell, President of the American Medical Association, be appointed by the Speaker to confer and consult with the proper federal representatives relative to the proposed National Health Program.

The Post-Graduate Instruction Program in Obstetrics is now well into its sixth month. Two circuits of five teaching centers each have been completed, and a third circuit is just beginning. The first circuit included Claremore, Pawhuska, Bartlesville, Vinita, and Miami, with an enrollment of 75 physicians. The second circuit included Poteau, McAlester, Durant, Hugo, and Idabel, with an enrollment of 77 physicians. The third circuit just opened in Wewoka, Muskogee, Okmulgee, Ada, and Shawnee. At the present time, there is an enrollment of 92 physicians in this circuit. These figures show that 152 doctors in Oklahoma have completed this post-graduate course in obstetrics, and that 92 more physicians are now attending the lectures in their respective centers. For the small fee of $5.00, it is the belief of the Committee that, with a few exceptions, every physician in Oklahoma should take advantage of this course.

The instructor, Dr. Edward N. Smith, has received many demands upon his time for free private consultations with class

members. During the circuit in southeastern Oklahoma, the instructor was called in on consultations over many and varied complicated malaria cases—malaria being a frequent complication with pregnancy.

It is contemplated that the next circuit will either include teaching centers in the north middle section of the state or in the extreme southwestern corner of Oklahoma. This will be determined shortly. Prior to the meeting of the Southern Medical Association which convenes in Oklahoma City November 15, announcements will be mailed to the section where the course will function next. Doctors of that particular area may enroll at the booth which the post-graduate committee will establish at that meeting. Physicians of all sections of the state are invited and urged to call at this booth and see outlines of the course, becoming acquainted with the plans from maps which will indicate when the course will occur for the county where each and every doctor resides.

MEDICAL TECHNOLOGY; ITS VALUE TO OKLAHOMA DOCTORS

What is a Medical Technologist?

In 1928 the American Society of Clinical Pathologists established the Registry of Medical Technologists as a voluntary bureau for certifying laboratory technicians who had minimum qualifications for this important field, properly called medical technology. It was the clinical pathologists who were especially interested in seeing that the assistants in their private and hospital laboratories were competent in their work. They realized that many laboratory workers had received very poor or no laboratory training at all, or that they were the victims of unscrupulous and blatantly advertised commercial schools that gave them but a smattering of procedures and failed to instill in them a realization of the responsibility that they were assuming. The American Society of Clinical Pathologists desired to establish a standard for laboratory workers and some means of signifying to the medical profession that certain technicians were qualified. The Registry became the means to that end. It assumed the responsibility for instituting standards for training schools; it inaugurated systematic and timely examinations conducted bi-annually. The result of these efforts is the Medical Technologist, a laboratory worker certified by the Board of Registry and found competent to practice medical technology within the bounds of the Code of Ethics.

Code of Ethics

"Registered Medical Technologists shall agree to work at all times under the supervision of a qualified physician, and shall under no circumstances, on their own initiative, render written or oral diagnosis except so far as it is self-evident in the report. They shall not advise physicians or others in the treatment of disease or operate an independent laboratory, or when employed by a physician accept work outside of his own practice."

A.M.A. Acceptance of Medical Technologists

In 1936 the A.M.A. accepted the recommendations of the house of delegates to recognize the examination and certification of laboratory workers by the A.S.C.P., thus making the Registery of Medical Technologists the authoritative bureau for licensing and qualifying laboratory workers throughout the United States and Canada. Moreover the standards for training schools of the A.M.A. and the A.S.C.P. are the same. A list of approved schools for technicians appears in the J.A.M.A., March 26, 1938, Vol. 110, page 982.

The requirements for admission to the examination for registration in medical technology are graduation from high school and two years college work (in a college or university approved by the regional college associations) with special emphasis on basic science subjects; chemistry, biology, bacteriology, and physics. Ninety quarter hours must be completed before admission to an approved training school or to the registry examination for medical technologists is granted.*

Examination and Certification

The examination is divided into an oral and a written portion; the applicant is asked to carry out certain standard laboratory procedures under the eye of examiners appointed by the Board of Registry. All questions, written and oral, are formulated by the Board of Registry and submitted to the appointed examiners under seal by the Board of Registry. By this method, a uniform, fair, and impartial examination is conducted.

Organization of Oklahoma Society of Medical Technologists

In April, 1936, every medical technologist in Oklahoma was invited to meet in Oklahoma City for the purpose of forming the Oklahoma Society of Medical Technologists. A representative group gathered at the medical school, and the Society was created to further the cause of Medical Technology, to bring about a closer fellowship among medical technologists and a better understanding between the physicians and technologists. Officers were elected, committees appointed, and a program for growth in medical technology was formulated.

At the present time there are 66 registered technologists in Oklahoma, and two recognized training schools for technicians, namely; the University of Oklahoma Hospital, and St. Anthony's Hospital, both in Oklahoma City.

One of the chief objectives of the organization has been to further the cause of the Board of Registry. An official Board of Registry exhibit has been placed at nearly every medical or hospital meeting held in Oklahoma since the organization of the society. The purpose is to bring to the attention of every licensed physician the service that the Board of Registry is rendering all doctors, in their program of certification, standards for competency, and ethical practices in Medical Technology.

A.S.C.P. Accomplishments

The A.S.C.P. has rendered a service of inestimatable value to doctors, patients, and medical technologists, for the establishment of the Board of Registry has brought about a stabilization of laboratory medicine in that it has:

1. Established a professional standing for laboratory workers.
2. Provided an adequate code of ethics to protect patients, hospitals, and doctors from deleterious practices.
3. Established standards of competency for the practice of medical technology.

*A laboratory worker who does not come up to the requirements but who had received his or her training prior to January 1, 1933, and whose technical qualifications are vouched for by a clinical pathologist, may, by special action of the Board of Registry, be considered eligible for the examination.

4. Certified training schools for training Medical Technologists.
5. Standardized examinations for registration throughout the United States.
6. Provided a title and insignia for Medical Technologists.
7. Elevated the scientific, economic, and social status of registered laboratory workers.
8. Obtained the support of the A.M.A., American College of Surgeons, American Hospital Association, and the Catholic Hospital Association.
9. Safeguarded interest and promoted welfare of M.T.
10. Outlined a program of post-graduate study and organized post-graduate seminars for medical technologists as a means of keeping them abreast of present day Medical Technology.

The Oklahoma Society of Medical Technologists' November Meeting

It is the hope of medical technologists in Oklahoma to launch a precedent which will consist of annual post-graduate seminars for technologists to be held in various medical centers where inspiration and ideas for technical improvements in their profession may be gleaned. With this in mind the O.S.M.T. has invited the technicians of the South to meet for study and fellowship in Oklahoma City, November 17 and 18, where they will be able to enjoy some of the speakers of the Southern Medical Association. Among the outstanding men in laboratory medicine who will speak and give demonstrations to us are Dr. R. R. Kracke, Dr. Meyer Bodansky, and others.

There will be a $1.50 registration fee to help defray the expense of the seminar, and will include the banquet ticket. Trips to the oil fields, hospitals, and points of interest will be available. A banquet and informal get-acquainted reception are other features of interest in addition to a worthwhile program which will be published in the November issue of this Journal.

The O.S.M.T. Appeal to Oklahoma Doctors

We urge every doctor who attends the Southern Medical Association in Oklahoma City to bring his technician with him. Give your technician an opportunity to hear the guest speakers and to get acquainted with other Medical Technologists. Even though a technician is not registered, he will be welcome to join us in these meetings and if he is interested in becoming registered, Dr. R. R. Kracke, past president of the A.S.C.P. and member of the Board of Registry, who will be there with the official registry exhibit, will be very glad to give your technician sound and authentic advice.

Doctors, we appreciate your interest and cooperation. We depend upon you for leadership and inspiration to attain greater efficiency. We are striving for technicial excellence, sincerely hoping that we will be able in our small way to assist you in your efforts to solve the problems of disease.

More detailed information regarding registration may be secured from Mrs. Anna Scott, Registrar of the American Society of Clinical Pathologists Board of Registry, 234 Metropolitan Building, Denver, Colorado.

Editorial Notes—Personal and General

DR. E. O. TEMPLIN and family of Alva spent a week in Colorado during September.

DR. W. E. SIMON of Alva is taking a three months' vacation and resting in Massillon, Ohio.

DR. C. A. ROYER, formerly of Kiowa, Kansas, has recently returned from a two years' post-graduate course and has located in Alva, being associated with Dr. A. E. Hale in the practice of eye, ear, nose, and throat.

DR. C. A. TRAVERSE returned September 5 from taking a 16-week post graduate course in Vanderbilt University.

DR. D. B. ENSOR returned August 28 from a month spent in eastern Tennessee and Kentucky.

DR. E. A. McGREW, Beaver, has returned from a meeting of the International Goitre Assembly at Washington, D. C.

DR. F. E. DARGATZ has been appointed as Director of the full time Health Unit, Ardmore, to fill the place resigned by Dr. R. M. Parish.

DR. REED WOLFE has been appointed as County Health Superintendent of Choctaw County.

DR. H. T. BALLANTINE, JR., Muskogee, and MISS ELIZABETH ELLIOTT MIXTER, daughter of Dr. and Mrs. William Jason Mixter of Brookline and Hardwick, Mass., were married in Boston September 24. They are at home at 77 Revere Street, Boston.

DR. AND MRS. JAMES L. PATTERSON and son, James, have returned from a vacation in Canada and down the west coast of the States to San Francisco.

News of the County Medical Societies

WOODS-ALFALFA County Medical Society held their regular meeting September 27 in Cherokee. Dr. J. W. Mercer and E. E. Talley, both of Enid, read papers on "Pre-Natal Disturbances, Symptoms and Treatment," and "The Thyroid," respectively. Dr. Talley's paper was discussed by Dr. E. A. McGrew, of Beaver. The next meeting of the joint Societies will be held in connection with a crippled children's clinic in December.

WESTERN Oklahoma Medical Society held its quarterly session at Hobart, September 13th. Following the dinner Dr. Carroll M. Pounders, Oklahoma City, read a paper on "Rheumatic Fever in Childhood." Dr. J. Wm. Finch, Hobart, read a paper on "The Etiology of Nausea and Vomiting of Pregnancy." Other Oklahoma County physicians visiting this meeting were Drs. C. P. Bondurant; J. Worth Gray; J. F. Kuhn, Sr.; Floyd Moorman, and Horace Reed.

APPOINTMENTS

Additions to the Faculty of the University of Oklahoma School of Medicine.

Dr. Donald B. McMullen, D. Sc., Johns Hopkins University, 1935, has been appointed Assistant Professor of Bacteriology (Division of Parasitology).

Dr. Rudolph F. Nunnemacher, Ph. D., Harvard, has been appointed Instructor in the Department of Histology.

The following men have been appointed Assistants in Medicine:

Dr. Allen G. Gibbs.
Dr. Vern H. Musick.
Dr. Ralph A. Smith.

Dr. Hubert E. Doudna has been appointed Lecturer in Anaesthesia and Head of the Department of Anaesthesia in the University and Crippled Children's Hospitals.

Rob't. U. Patterson, M.D.,
Dean and Superintendent.

OBITUARIES

DOCTOR WALTER P. HAILEY

Dr. Walter P. Hailey of Haileyville, Oklahoma, died at the Albert Pike Hospital, McAlester, September 12 as the result of a long illness.

He was born in McAlester in June, 1876, son of the late Dr. D. M. Hailey, who was a pioneer physician and coal operator in Pittsburg County. Dr. Walter Hailey practiced medicine in Pittsburg County during his entire professional career and was one of the participants in the development of organized medicine in Indian Territory. He attended Kemper Military Academy at Boonville, Mo., took a pre-medical course at Cornell University and graduated from Columbia, New York City, in Medicine. He was married to Miss Grace Moulten of Greenville, Texas, in 1899, who preceded him in death in February, 1935.

Dr. Hailey was a gracious gentleman, who never spoke ill of any fellow practitioner and gave his services freely both in a civic and professional way.

The last rites were held September 14 at the Haileyville home by the Rev. Charles F. Schwab, pastor of the First Christian Church, McAlester, with burial in McAlester.

Another pioneer medical man of Indian Territory has passed to his reward, leaving many close and intimate friends to mourn his demise.

DOCTOR GILES E. HARRIS

Dr. G. E. Harris, Hugo, pioneer physician of Choctaw County, died following an automobile accident September 14 in which his car overturned after striking another head-on.

Dr. Harris was born at Quitman, Texas, 58 years ago. He attended and graduated from the Louisville University at Louisville, Ky., after which he served his internship in St. Louis. In 1906 he moved to Boswell where he began the practice of medicine, living there until 1918, when he moved to Hugo, where he remained until the time of his death.

Dr. Harris was a member of his County Medical Society, State Association and the American Medical Association. He was a charter member of the Hugo Lions Club, a member of the Masonic fraternity, State Historical Society and the American Legion.

He is survived by his widow and two daughters.

Burial was in Mount Olivet Cemetery, Hugo.

RESOLUTIONS

Report of Committee on Resolutions. Muskogee County Medical Society. August 17, 1938.

DR. F. B. FITE

WHEREAS, our esteemed co-worker, Dr. F. B. Fite, has been called by the Great Physician, and,

WHEREAS, for many years he was a prominent and active member of our society, and our profession, and,

WHEREAS, his professional attainments, and sterling qualities were known and admired both within and without the profession,

THEREFORE, be it resolved, by the Muskogee County Medical Society, that we record our sadness in his untimely passing, holding in memory his splendid skill and personality as a professional man, a loving and generous husband and father, an active civic leader, and, withal, kindly and generous, and,

BE IT FURTHER RESOLVED, that a copy of these resolutions be spread upon the minutes of the Muskogee County Medical Society, and that a copy be sent to the Journal of the Oklahoma State Medical Association, and the Journal of the American Medical Association.

Respectfully submitted,

J. Hutchings White, Chairman
L. S. McAlister, Member
J. T. Woodburn, Member.

Proctologic Tumors

During the last six years C. C. Tucker and C. A. Hellwig, Wichita, Kans. (Journal A.M.A., Oct. 1, 1938), studied by microscopic methods every specimen removed during anorectal operation. In the majority of cases nothing was detected by histologic study which changed the prognosis or treatment based on clinical examination. There are, on the other hand, so many cases in which the microscopic examination revealed conditions which were not suspected clinically that the routine histologic study of proctologic specimens seems well justified, in the interest of the patient. McCarty, basing his statistics on 150,000 surgical cases, found that routine microscopic examination revealed in 0.5 per cent of all operations a malignant condition which was not suspected by clinical methods or during operation. In the authors' 951 proctologic cases this percentage of clinically unrecognized cancer is almost four times higher, namely 1.9 per cent. The conclusion therefor eis justified that, more than in other regions, early malignant lesions of the anal and canal may closely resemble harmless conditions. Many of the malignant tumors in th ematerial were small and 18 of the 52 malignant tumors were discovered during routine histologic examination of what seemed clinically harmless anal lesions. Two adenocarcinomas and a basal cell carcinoma were completely removed by hemorrhoidectomy and in the specimen removed at the subsequent radical operation after the histologic diagnosis was established no trace of malignant tissue could be detected. In six of the 52 malignant cases, cancer developed in previously existing anal lesions. One adenocarcinoma was found originating in a fistulous tract, one squamous cell carcinoma in a fissure, three adenocarcinomas in hemorrhoid nodules and one basal cell carcinoma in an external hemorrhoid. The material of adenomatous polyps could be classified with one exception by histologic criteria as either benign or frankly malignant tumors. Only one polyp showed atypical glands in a small area, probably a transitional stage of a benign into a malignant growth. The fact that hypertrophic anal papillae are often confused with adenomatous polyps has been stressed in a recent paper by Tucker of San Antonio. In several cases the diagnosis of adenoma was made by an occasional proctoscopist, when the location in the dentate line and the whitish surface characterized these structures as enlarged papillae. The authors agree with Tucker that hypertrophic papillae do not carry a serious prognosis as compared with adenomas. Not infrequently, patients seek proctologic advice while their symptoms are caused by extra-anal conditions. The complex embryologic changes occurring in the sacral region explain the origin of chordoma (two cases), teratoma (one case) and dermoid cysts. Of pelvic tumors which produced symptoms calling for proctologic examination were one ovarian dermoid which became infected and perforated into the rectum and one adenomyoma of the rectovaginal septum. A patient with a tumor of the cauda equina consulted a proctologist first because of anal discomfort. A sweat gland adenoma, a myxoma and a hemangioneruromyoma of the glomus type were observed in the perianal region.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Conization of the Cervix; Miller and Todd; Surgery, Gynecology and Obstetrics; September, 1938; page 265.

This article is based upon 899 conizations performed in the University of Michigan Hospital during the past four years. While at first the procedure was carried out in the office as well as hospital, they now prefer to hospitalize every patient for three or four days. They state that it takes about six weeks for complete epithelization to occur following conization. To guard against stricture they place an iodoform wick in the cervical canal at the time of conization, remove it on the third day, have the patients take daily cleansing douches and report every two weeks for introduction of sterile sound into the canal.

They have come to the conclusion that extensive conization cannot be viewed as a substitute for simple cauterization, coagulation, or other valuable means of treating benign cervical disease. However, they feel that the benefits of extensive conization are real and should have a place in everyday gynecological surgery.

Though their indications have fluctuated somewhat, their present indications for using this method of treatment follow:

"1. As a means of correcting minor cervical disease and preventing remote complications of the cervix, **in patients for whom subtotal hysterectomy is planned.**

"2. As a means of eradicating deep seated, chronic infections of the cervical canal **in older women.**

"3. As a complete substitute for the Sturmdorf operation any condition of the cervix for which Sturmdorf operation is indicated.

"4. As a means of obtaining adequate biopsy material in cases in which original biopsy material presented cytological abnormalities strongly suggesting neoplastic change.

"5. As a substitute for older methods of trachelorrhaphy in most women but especially in elderly women.

"It is difficult not to become enthusiastic over the use of conization and we feel a word of caution is justified for the procedure is not without drawbacks. Extensive conization as here described is a hospital procedure and should be reserved for the more severe types of cervical lesions."

They had no serious immediate complications in their group of 899 conizations.

In their follow-up study the late results showed a stricture incidence of 8.97 per cent but they feel with the more recent greater care during the healing period the number of strictures has decreased. They state that the majority of strictures were mild and required only dilatation or the passage of a sterile sound or hemostat.

They note that the number of pregnancies subsequent to conization in this series was small, the trend certainly suggesting a harmful influence on subsequent pregnancies. "This tendency to early interruption of pregnancy is another drawback and suggests its use only in women past the childbearing period, and even then we do not consider it a substitute for the less radical office procedures in **mild** cervical disease."

Their concise evaluation, summary, and conclusions follow:

"Electrosurgical conization of the cervix appears to have a real place in gynecology. As a means of treating stubborn chronic cervicitis in women past the childbearing age, it far surpasses any other procedure known to us short of total hysterectomy. The excision of gland bearing tissue can be made complete although such extensive conization is probably not often necessary. We have found it a satisfactory substitute for the Sturmdorf operation and for most trachelorrhaphies.

"We believe that our experience with this operation justifies certain general conclusions:

"1. Conization of the cervix as here described is a valuable, safe, rapid, and eminently satisfactory way of treating the **more extensive benign lesions of the cervix in older women.**

"2. In general its use should be limited to women past the child-bearing age and even in this group should not be looked upon as a substitute for the less radical office procedures now in use in the treatment of simple cervical disease.

"3. Conization is many times faster, simpler, and a bloodless substitute for—and in our clinic has completely replaced—the Sturmdorf operation. The amount of tissue removed can be controlled and conization equals in efficiency any means of cervical gland reaming now available. Ultimate healing is but little slower than in the Sturmdorf procedure and the incidence of severe stricture probably no greater.

"4. Conization is a desirable, quick, and convenient method of treating the cervix prior to subtotal hysterectomy."

COMMENTS: This is an excellent article based on a fine piece of work done in a most practical field. It will do much in assisting the proper appraisal of this operative procedure upon the uterine cervix for the elimination of chronic irritations and chronic infections.

While it was originally indicated by Hyams of New York as an office procedure, it is quite evident that most men now consider it far better to hospitalize patients. It is also recognized that conization is a more formidable procedure than it was at first considered and that the proper selection of patients is of the utmost importance.

Wendell Long.

The Problem of Intra-Abdominal Injuries Due to External Trauma—Two Cases of Rupture of the Intestine. (Le Probleme du Traumatisme Ferme de l'Abdomen—Deux cas de Rupture Intestinale). By A. Bellerose, Notre-Dame Hospital, Montreal.

Translation of the French title is free because a reading of the article indicates that the author is discussing the question of intra-abdominal lesions

due to external, non-penetrating injuries of the abdomen resulting from the sudden application of force, like blows upon the abdomen.

Attention is directed to the importance of systematic and uniform examination of the patient from hour to hour, particularly in those cases in which the situation is not at first perfectly clear.

The cases are divided into those where there is rupture of a solid organ, like the liver, for example, with hemorrhage; and those in which there is rupture of a hollow organ, like the gastro-intestinal tract or the urinary bladder.

When there is immediate severe hemorrhage, shock is pronounced, the clinical picture being characterized by great weakness, small and rapid pulse, cold and sweating skin, paleness, with, sometimes, dullness in the flanks. In such a situation the author advises immediate operation in order to stop the hemorrhage. (L'hemorragie reconnue, l'acte operatoire s'impose d'emblee sans qu'il soit tenu compte de l'etat general due malade; seule, une hemostase peut lui sauver la vie). I shall say something about this radical advice in the comments following the abstract.

When there is rupture of a hollow organ, most often the intestinal tract, without hemorrhage, there is frequently severe pain and temporary prostration, but the patient may apparently recover within a very short time, and be able to be up and about for a little while, this period of relief being followed by evidences of peritoneal irritation, such as rigid abdomen and the return of severe pain.

The cases of two patients are reported, there being a rupture of the intestine in each case.

In the first case a youth of 18 years was struck upon the abdomen by the knee of a companion while in play. There was immediate intense pain with partial loss of consciousness and a little later vomiting. Within a short time, however, he was apparently all right, and walked home, the distance not being indicated. Soon after that there was return of abdominal pain. A physician was called and he was sent to hospital. On admission to the hospital the pulse was 74, the temperature in the neighborhood of normal, blood pressure 124/80, respiration 24, shallow and distinctly thoracic in type. There was rigidity of the entire abdominal wall. The white blood count was 45,000. There was a diagnosis of a rupture of the intestinal tract. Laparotomy revealed some liquid in the abdomen having the gross characteristics of pus, but without odor (the article is not clear as to how long it had been after the accident, but probably about 24 hours). There was congestion of the peritoneum which was covered by diphtheroid membranes. ("Le peritoine visceral est congestionne, recouvert de membranes dithteroides"). A perforation of the small intestine about 60 centimeters from the duodenum was found. It was closed by two rows of simple catgut suture. A tubular drain was placed in the lower abdomen. There was recovery without any particular difficulty, the patient being discharged on the thirty-second day.

In the case of the second patient, a man 47 years of age, there was a fall of about 10 feet, the abdomen striking a piece of timber. There was immediate severe pain in the epigastrium. He was seen by a physician, and soon after that went to his home. The pain became worse and the physician was called again. He was sent to a hospital where it was found that the pulse was 88, temperature 96.3, blood pressure 134/95. There was board-like rigidity of the abdomen. The respiration was thoracic in type and shallow. Digital examination per rectum was painful. There was a diagnosis of probable rupture of the intestinal tract, and immediate operation advised. There was an escape of serous-like liquid with a little bile when the abdomen was opened. There was slight congestion of the visceral peritoneum. After a laborious exploration a perforation about the size of a 10-cent piece was found about two fingers breadths from the duodenum. The perforation was closed by three layers of catgut sutures. A tubular drain was placed in the pelvis. The article states that the postoperative course was normal, but it indicates that the patient was discharged 72 days after admission.

COMMENTS: (1) We do not believe that there should always be an immediate operation in the presence of what appears to be hemorrhage due to damage of a solid organ, like the liver, spleen, etc. We believe that our experience and the experience of others would indicate that one must be extremely careful about immediate operative procedures in the presence of profound shock. If it is decided to do an operation in such a situation, there should, of course, be the intravenous introduction of material, like saline and glucose solutions to hold the patient up temporarily, with an immediate transfusion of blood as soon as the hemorrhage has been controlled. The difficulty, however, in some of these patients is that it is extremely hard to do an operative procedure that will control hemorrhage satisfactorily, especially in the case of wounds of the liver.

(2) The procedures in the two cases of rupture of the intestinal tract reported were, in our judgment, ideal. When there is strong reason to believe that there is a rupture of the intestinal tract, operation must not be delayed because if it is, there will be a fatal peritonitis.

(3) I wish to call particular attention to the employment of tubular drainage of the lower abdomen. For some years there has been a tendency to close the abdomen without drainage. We believe that in the case of rupture of the intestinal tract it is a mistake not to drain. If drainage is employed, it ought to be of such a character that drainage will be free, and we know of no better method than the employment of a suitable rubber tube. One other word: If a drain is employed, it should be permitted to remain for a week or 10 days. Regardless of the oft-repeated statement that drainage ceases within a short time after the introduction of a drainage tube, careful clinicians know that clinical results do not bear out that statement.

LeRoy Long.

Traumatic Rupture of the Bile Ducts; Kenneth M. Lewis, New York, N. Y.; Annals of Surgery; August, 1938.

In a review of the literature the author finds only 47 reported cases of traumatic rupture of the bile ducts. Since 1921 he is able to find only six reported cases, one of them being our case published in Southern Medical Journal, March, 1929. The conclusion is that the accident is very rare. The author adds an additional case treated by him at Bellevue Hospital, New York, in 1931.

In the case reported by the author the patient was a truckman 49 years of age. He was admitted to hospital July 30, 1931. He had been crushed between two trucks a short time before examination. "The trauma involved the right upper quadrant of the abdomen in the region of the costal margin." There was a history of moderate shock but it had subsided by the time he entered hospital. There was "considerable pain in the region of the right costal margin." Patient declining to remain in hospital, he was permitted to go home after strapping right chest with adhesive plaster.

Two days later he returned complaining of progressive pain in right upper abdomen, of cough, of having vomited one time. The temperature was 101. "He appeared acutely ill, was quite weak, and was in a profuse perspiration." Abdomen was distended. There was tenderness and rigidity in right upper quadrant. There were evidences of consoli-

dation lower lobe right lung. The diagnosis was pneumonia.

There was progressive distention abdomen. "On the fourth day it was noted that there was a large amount of fluid in the abdomen." There was some jaundice. There was bile in the urine.

Seven days after the injury jaundice was very marked, the stools clay-colored and great distention of the abdomen. "There was persistent localized tenderness over the right upper quadrant of the abdomen, and the pneumonia in the right chest showed signs of resolution. Diagnosis of rupture of one of the bile ducts was made."

Surgical operation was done through a right upper rectus incision August 9, 1931, 11 days after the injury. There was a large amount of bile in the abdomen (about seven quarts). All intra-abdominal structures were deeply bile-stained. "A constant stream of bile was seen to be seeping from the region of one of the hepatic ducts, but the actual tear in the duct could not be identified." After placing a cigarette drain in Morrison's pouch the abdomen was closed.

The early postoperative course was stormy. There was profuse drainage of bile for 10 days. The jaundice gradually disappeared, but stools remained clay-colored. Bile gradually disappeared from the urine. A sinus (fistula?) with draining bile persisted. He was discharged in this condition September 4, 1931, 27 days after operation. One month after discharge the sinus (fistula?) was healed. Stools were of normal color.

In November, 1931—about two months after discharge—"the patient was again admitted to the hospital with a history that during the preceding month he had become gradually more and more jaundiced and that the stools had again become very light in color." He was kept under observation for a month, "during which time repeated biliary drainages would produce a temporary flow of bile into the duodenum, but at no time did the jaundice entirely disappear."

A second surgical operation was done January 16, 1932. There were dense adhesions fusing structures in upper abdomen. "The common bile duct was finally exposed, and was followed upwards beyond its junction with the cystic duct into the sulcus in the liver. Scar tissue could then be felt in the common hepatic duct, high up under the liver, but it was impossible to expose the stricture so that it could be seen." It was decided to discontinue operation. A cigarette drain was placed and the abdomen closed.

A duodenal fistula developed five days after operation. It healed after continuous suction for five weeks. By April, 1932, the jaundice had subsided, but there was an incisional hernia for which a third operation was done in May, 1932.

Patient has been under observation for six years, during which time "there is always a residual jaundice," for which "duodenal drainage" is done about twice a week and "if these are persisted in, the patient remains quite comfortable." However, about once every six months there is an attack of severe pain in right upper abdomen associated with sudden increase of jaundice, light colored stools and fever from 102 to 103. Morphine gives relief and "the attacks are always over within a day or two."

COMMENTS: In our case, to which the author kindly refers, the patient was an unmarried white woman of 40 years. There was a crushing injury of upper right abdomen and lower right chest by being caught between two automobiles on March 3, 1928. At the same time there were fractures of right scapula and right patella. She fainted while she was being held between the two cars, but was unconscious for only a few minutes. There was pain in right upper abdomen, and pronounced shock.

There was slight jaundice three days after injury, but no acute abdominal distress. There was comparative comfort until nine days after injury when it was noticed that the abdomen was enlarged, and the enlargement increased progressively. The jaundice was a little more pronounced, but was never extreme. There was increasing weakness. There was no nausea.

We first saw patient when she was admitted to our service at University Hospital, Oklahoma City, March 22, 1928, 19 days after injury. There was a greatly distended abdomen, **slight** jaundice and general weakness. The percussion note over abdomen was flat throughout. There was but little tenderness. There was no definite rigidity. There was a little yellowish staining of sclerae. The skin was sallow, with slight yellowish tinge. Pulse 110, blood pressure 110/75, direct van den Bergh 20, bile in urine, R.B.C. 3,820,000, W.B.C. 12,000, polymorphonuclears 76 per cent. The day following admission paracentesis abdominis recovered 4,500 c.c. of thin bile.

OPERATION: With a tentative diagnosis of rupture of some part of biliary tract, operation was done through a right upper rectus incision, under local novocain and general nitrous oxid-oxygen anesthesia on March 26, 1928, **23 days after injury.** There was about a gallon of bile in peritoneal cavity. **With the exception of gall bladder,** the viscera were of a dark mahogany color. **The gall bladder was pale.** There were soft adhesions between and about the viscera.

After removing bile from peritoneal cavity it was observed that bile was escaping from a point in the region of hepatic duct just below the liver. No attempt was made to expose the duct because at that particular point such an attempt was regarded as futile and dangerous.

There was some question as to whether the rupture was in hepatic duct proper or in one of its radicles only. In order to determine that point, the gall bladder was opened. **It did not contain a single demonstrable drop of bile.** Believing that if there had not been a destructive injury of the **hepatic duct proper** there would be at least some bile in gall bladder, we concluded that there was a destructive injury of hepatic duct proper.

In this case there was no evidence of infection. The aspirated bile soon after admission was reported "negative" after being in culture for several days.

Remembering that tubular anatomical structures lined with mucous membrane tend to repair after injury, **provided** there is no infection and that there is not accumulation of material in or about them, the principal requisite appeared to be adequate drainage. We endeavored to meet this requirement by: (1) Placing a very small rubber drainage tube with the end of it at point of escaping bile, **and fixing it there** by a catgut suture passed through the tube before placing it in position, and then, with as much care as possible, through some loose tissue in immediate neighborhood of leak, and leaving it there for many days. We do not believe that a Penrose or a cigarette drain are comparable in efficiency to the proper kind of rubber tube. (2) Provision for escape of any material (serum, debris) from duct distal to rupture and for **reduction of intraductile pressure.** To meet these indications, a large rubber tube was fixed in gall bladder. Incidentally, another reason for putting tube in gall bladder was to determine time of entrance of bile into gall bladder — very important, because no bile would come out of tube in gall bladder if it had not entered hepatic duct below point of rupture. (3) Limitation of extravasation of bile, with increased drainage of peritoneal cavity at same time. This requirement was met by tucking two sheets of rubber dam under and about gall bladder, bringing the ends outside through the operative incision.

There was free drainage of bile per small tube placed at the point of rupture and about the rubber dam for seven days, after which it was intermittent, gradually decreasing.

Three days after operation bile was coming from tube placed in gall bladder. This was definite proof that bile was entering duct distal to point of rupture.

No attempt to move the bowels was made until the fourth day after operation when an enema of one pint of warm water was given, producing an evacuation of "a few small whitish fecal masses in cloudy fluid." On April 3, 1928, a small (one pint) enema of warm water was followed by the expulsion of "greenish fluid with light yellow feces." A laboratory report showed bile in the material.

The two sheets of rubber dam drainage and protective material were removed April 9, 1928 **14 days after operation.** The tube in gall bladder was removed two days later, **16 days after operation.** On April 18, 1928, drainage had ceased.

The postoperative course was satisfactory in every respect. As far as the injury to the bile duct was concerned, the patient was well on April 18, 1928—23 days after operation—but she was kept in hospital until May 3, 1928, because of the fractured right patella. The last report about her was nine years after discharge at which time she was in good health, and had been in good health all the time following operation.

Finally, we wish to stress the importance of (1) the fixation of a small rubber drainage **tube** at the point of rupture, (2) the fixation of a large rubber tube in gall bladder, if the rupture is proximal to it, in order to provide an exit for debris, to reduce intraductile pressure, and as a means of indicating when bile is entering the duct distal to rupture; and, (3) adequate drainage and protection of peritoneal cavity contiguous to the bile-tract area.

In writing these comments we have drawn heavily from our article on "Traumatic Rupture of the Bile Ducts," published in The Southern Medical Journal, March, 1929.

LeRoy Long.

Urinary Stress Incontinence, The Anatomical Defect Found and a Rational Method for Its Treatment; Davies; Surgery, Gynecology and Obstetrics; September, 1928, page 273.

This is a most excellent study of the muscles surrounding the urethra, together with the principles involved ni the surgical repair of damage to musculature, particularly at childbirth.

The following conclusions give in outline form the findings and opinions of the author:

"1. The female urethra is approximately four centimeters in length.

"2. Two layers of involuntary muscle surround its entire length.

"3. At its bladder attachment the urethra is encompassed by an additional layer of involuntary muscle called the sphincter of the vesical neck.

"4. Under resting conditions the involuntary muscles maintain a tonicity about the urethra sufficient to maintain urine within the bladder.

"5. Increased intra-abdominal pressure requires a voluntary sphincter about the urethra which contracts synergistically with the muscles causing increased intra-abdominal pressure.

"6. The voluntary muscles correspond to the three muscular layers of the abdominal wall.

"7. The deepest voluntary sphincter is derived from the levator and angulates the urethra posteroanteriorly. At times the levator supplies a voluntary coat to the entire length of the urethra.

"8. The intermediate voluntary sphincter lies between the layers of the urogenital diaphragm and is called the deep transverse perineal muscle.

"9. The superficial voluntary sphincter is due to the simultaneous contraction of the bulbocavernous muscles which lie lateral to the vagina and communicate anterior to the urethra.

"10. The involuntary sphincters are usually damaged while the head is in the midpelvis, and the damage is due to the displacement of the bladder with concomitant lacerations in the midline.

"11. The voluntary sphincters are usually damaged at the pelvic outlet.

"12. Two anatomical damages are possible: the one being due to prolonged overstretching brought about by a long labor; the other due to a midline laceration which may extend from the cervical attachment of the bladder to the external urinary meatus.

"13. Patients with stress incontinence who have no gross anatomical damages should be trained to develop the voluntary muscles of the urethra.

"14. In those having anatomical damage accurate reconstruction can be accomplished by first reapproximating the lacerated tissue at the base of the bladder, which repair when continued distally will reconstruct the involuntary sphincter at the neck of the bladder and eventually, the levator and the deep transverse perineal muscles.

"15. The superficial sphincter is reconstructed as the posterior perineal body is repaired.

"16. In a series of 50 cases of stress incontinency since 1930, surgical treatment resulted in cures in all but five cases, or a successful outcome in 90 per cent."

COMMENTS: Urinary incontinence is very prevalent condition in women and a proper understanding of the anatomy is essential for its correction. Many operations done for this symptom are ineffective and it would be well for those doing this type of surgery to carefully read this article by Lavies, in order to increase the percentage of successful cases.

Wendell Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Some Problems Encountered in Cataract Surgery. Watsin W. Gailey, M.D., Bloomington, Ill. American Journal of Ophthalmology, August, 1938.

This paper is a resume of the writer's experiences in dealing with the cataract problem. It is well worth while. It deals not so much with theory as with practical points learned over a period of years, some of which were gleaned in India. First is stressed the point that it is necessary for the surgeon to know what result he expects to get from the operation — eliminating the possibility of accidents and complications. Except in the case of dense hypermature cataracts the light perception and light projection tests will give this information. A history of poor vision before the formation of the cataract should make the surgeon cautious as to his prognosis—keeping in mind the fact that cataract may be a complication of glaucoma, detachment of the retina and choroiditis.

Uncompensated cardiac disease, chronic bronchitis, bronchiectasis, asthma, hypertrophy of the prostate, hemorrhoids, chronic constipation, high blood pressure, infected teeth, and diabetes should be thoroughly investigated before operation and if present, corrected as much as possible, before the extraction is attempted. The author relying on experience gained in India doubts that septic teeth have any connection with inflammatory conditions following cataract removal, since practically all

cases there had septic teeth (these patients may have had a high degree of resistance or have attained immunity).

Intraocular tension should be determined; the presence of a cough is important. One hundred and eighty-five is the accepted pressure (systolic) by the author for operative work on the eye. The incidence of expulsive hemorrhage is about one in a thousand. The author reports six expulsive hemorrhages. If the routine methods of reducing hypertension are not successful blood-letting is resorted to one hour before operation. Slit-lamp study helps to determine the type of operation to be done. Diabetic-cataract and senile cataract with diabetes are not inoperable if properly prepared. Postoperative iritis and iridocyclitis are apt to occur here. Caution is advised in dealing with nuclear cataracts of high myopia and nuclear cataracts with a clear posterior cortex. Wassermans are not done routinely. The lacrimal sac if infected, is removed. Prior to 1930 cultures were done routinely and an infection was expected about every two years. Since 1930 the taking of preoperative cultures has been discontinued and no infections have occurred. When the taking of cultures was discontinued, preliminary scrubbing of the skin and irrigation of the conjunctival sac was discarded. Face mask and rubber gloves are used. Which has caused the lack of infections the author is unable to state. In deciding when to operate one must consider age, visual acuity, physical status, prejudices, and occupation of patient. An important factor to the author in this decision is the state of mind or the unhappiness of the patient. Preparation for operation consists of a pad of cotton saturated with an acridine dye kept on the eye for 12 hours previous to operation. Nembutal and luminal are used to control nervousness and is used for as long as a week after operation. Five per cent euphthalmine is used for dilatation—one drop every 15 minutes for four times—first instillation two hours previous to operation.

The author attempts intracapsular extraction in patient over 40 years of age. There follows a discussion of indications for intracapsular and extracapsular extractions. A change of method may be indicated after the section is made. The author voices the opinion that elaborate preparation of the field is largely a pose but stresses the point that "instruments used within the eye be not contaminated by touching the skin or lashes." Cocaine, four per cent, every two minutes for six instillations, is used. O'Brien method of akinesia is used. If this is not successful then the Van Lint is used. Retrobulbar anaesthesia is produced by injection of 2 c.c. of four per cent novocaine solution. Eight minutes later the speculum is introduced.

Technique and the problems encountered in the course of the operation are gone into quite minutely. Postoperatively daily dressings are done. Postoperative complications are discussed and the method in which they should be handled. Daily dressings are continued through the fourteenth day and the shield is worn at night for another week. Patients are ordinarily hospitalized for a period of 10 days following the operation. The author's closing paragraph: "Even though we are provided with all the modern methods, problems seem to lurk at every twist and turn of the surgeon's pathway and serious complications occur all too frequently." This is an original article without bibliography.

Cholestreatoma Verum of the Right Mastoid. M. D. Friedman, M.D., and S. S. Quittner, M.D., Cleveland. Archives of Otolaryngology, August, 1938.

This case is reported because of the rarity of the condition. The patient was a male, age 25, white, American. In February, 1937, some friend commented to him that his face "seemed crooked." He was told it was Bell's palsy and would clear up in time. No improvement was noted, however, as time went on. He remembered that a year previous to this he had felt twitchings in his face at irregular intervals. General physical examination absolutely negative—no headache—no nausea—no vomiting—no olfactory disturbance and no difficulty swallowing. Neurological examination showed: peripheral type of facial paralysis, right side. The hearing was impaired right side—right external auditory lumen narrowed—membrani tympani normal and glistening—taste normal. An expanding lesion of some kind was suspected which was encroaching onto the external auditory canal.

The report of the roentgengoram taken was: "The right mastoid is densely sclerotic and entirely devoid of cellular outlines. The cortex is greatly thickened, and there is diminished density of the antrum close to the sinus, suggesting early cholesteatoma formation. The right pyramid shows a loss of continuity of the lateral portion of the superior margin but is otherwise fairly cellular. There is no thickening of the margin, and the calcium content appears to be normal. Impression: sclerosed right mastoid, with possible early cholesteatoma and involvement of the right petrosa."

A spinal puncture showed increased pressure. It was decided to approach the lesion through the right mastoid. April 26th the patient was operated. Upon removal of the cortex a white glistening membrane was seen; bone of the external canal had been absorbed; facial nerve (1.5 cm.) was brown in color and free in the debris; debris did not involve the middle ear; removal of debris in region of the lateral sinus brought a gush of blood; pressure was applied and another attempt to continue the operation was made when there was a second gush of blood; pressure pack was applied for five days; thrombosis having taken place packs were removed and the operation completed. Recovery was uneventful. Hospitalization ceased May 9th. The facial paralysis is recovering rapidly. Pathologically the tumor removed was diagnosed as an epidermoid cyst.

The Diagnosis of Nasal Allergy and Its Relation to Other Manifestations. French K. Hansel, M.D., St. Louis, Mo. The Southern Medical Journal, September, 1938.

This is quite an interesting article in which the author illustrates his various points with cases reported which do not lend themselves well to abstracting. The author's summary is as follows:

In the diagnosis of nasal allergy, the following points should be taken into consideration: (1) the nasal symptoms, (2) the changes in the mucosa, (3) the cytology of the nasal secretions, (4) the X-ray findings, (5) the histopathology and bacteriology, (6) the existence of acute or chronic infection, and (7) the influence of physical agents and endocrine factors. From the purely allergic standpoint, further investigation should consider: (1) the family history of allergy, (2) the occurrence of other manifestations in the past and present history, (3) the detailed clinical history, (4) the skin tests and other laboratory studies, and (5) the general physical examination.

These studies on the association of the various manifestations of allergy show the common occurrence of this condition in multiple rather than in single form. The patient usually presents himself for diagnosis and treatment for that manifestation which dominates the clinical picture. Associated manifestations of lesser importance, therefore, should not be overlooked. The patient with perennial nasal symptoms of allergy may have hay fever in the spring, summer, or fall. The hay fever symptoms may dominate the clinical picture while the nonseasonal symptoms may be mild or severe. If mild, attacks may be considered as acute rhinitis. Patients with perennial nasal symp-

toms may have asthma either with hay fever or only during the winter months. It is important to emphasize also that allergic bronchitis not infrequently accompanies nasal allergy during the winter months without any very definite evidence of true asthma. The nasal manifestations of allergy in children are frequently overlooked unless associated with asthma. The patient whose respiratory symptoms consist only of hay fever may have allergic headache or gastro-intestinal allergy or some form of skin allergy at other times of the year. Gastro-intestinal allergy or allergic headache may, on the other hand, appear as the predominating symptom. Nasal symptoms may be associated in mild degree. The diagnosis of nasal allergy is always good presumptive evidence that these other manifestations are also of an allergic nature. Such manifestations as allergic headache, gastro-intestinal allergy, and skin allergy are most frequently caused by hypersensitiveness to foods. The association of these manifestations with the respiratory types of allergy always suggests very strongly that foods also play an important part, as etiologic factors. From these studies it is evident, therefore, that most allergic patients are affected with multiple manifestations all of which must be considered in the clinical picture from the standpoint of diagnosis as well as treatment.

The Base of the Skull, With Particular Reference to Fractures. William J. Mellinger. Annals of Otology, Rhinology, and Laryngology, June, 1938.

The author's summary is as follows:

1. The base of the skull with its many foramina, their direction and the structures which pass through them, as well as the tightly adherent dura, must be carefully considered in fractures.

2. Fractures involving bones containing air cells may bring serious complications, particularly when this pneumatization is extreme. It may extend to the limits of any bone in any or all directions and the process may extend into adjoining bones.

3. The floor of the anterior fossa may consist entirely of pneumatized bone, the floor of the middle fossa almost entirely and the floor of the posterior fossa always consists partially of bone containing air cells. A basal fracture then must usually be considered compound unless proven to be otherwise.

4. The sphenoid is the "key-stone" of the skull, situated in the middle of the base and is in line of practically all basal fractures.

5. The temporal bone occupies a wide area in the base of the skull, and is unique in its connection with other bones. The arrangement is usually such that a certain amount of movement from below upward is possible.

6. Transverse fractures of the petrous pyramid usually extend through the labyrinth and seldom heal by bony union because the endochondral layer is not endowed with regenerative power. Thus in such cases there is constant danger of intracranial involvement in the event of upper respiratory infection.

7. The abducens nerve is placed in a very vulnerable position on account of its intimate relation with venous spaces throughout most of its long course, also on account of its relation with the basi-sphenoid and the petrous apex. It is very frequently involved in fractures through the middle fossa.

INTERNAL MEDICINE

Edited by Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

A Broader View of Postmortem Examinations. By Alan Gregg, New York, N. Y. (Annals of Internal Medicine, August, 1938, Vol. 12, Number 2.)

In this the author in a brief and unusual manner presents a discussion on postmortem examinations and interrogates: "What advice could be given to laymen on how best to utilize a doctor's services or how can the laymen best make use of the physician's knowledge and experience?" "How can he protect himself against incompetence and selfishness? What should the layman know of the physician's professional ethics and usages? On what terms does the physician give his best service? Where lie pitfalls of misunderstanding between physician and patient? Are there any steps the layman can take to insure as well as encourage the best of medical performance?"

The author considers three factors in the solution of these questions. First: "I belong to a dinner club that plans a series of meetings at which a representative of several professions will advise the rest of us how the services of his profession can best be used by the laity. An architect, for example, will tell the rest of us how we can best make use of an architect's knowledge and experience, how to protect ourselves against incompetence or selfishness, what the layman should know of the architect's professional ethics and usages, on what terms does the architect give his best services, where lie pitfalls of misunderstanding between him and his client, what course, in short, would be wisest for the client to pursue in order to put the architect in the easiest position to give his services most effectively. And similarly we shall call upon some of the other professions; for example, an investment counselor, a newspaperman, an insurance expert, a lawyer, and—a physician. For in a society so differentiated into special callings as is the society of our times we are all laymen in everything but our own professions. And I would hold it to be wise to learn whatever possible of how to approach and maintain effective relations with other professions than one's own, and to learn this at a time divorced if not remote from the pressure of immediate need. It is probably equally wise, too, for every profession to cultivate public understanding rather than merely to court general approval."

Second: "I have realized the extraordinary fluidity of the population of the United States in contrast to the stability of residence of the Europeans. Travel by automobile has not only replaced much travel by train but it has extended the number and range of trips, excursions, visits, and it has encouraged moving and changes of residence. We think nothing of distance. We are the most restless and movable people on earth—or above it. Consequently a seriously large number of persons, separately or in families, must call an unknown physician in some unfamiliar place of residence. Now this is done usually on a basis that scarcely deserves the words choice or selection. The situation lacks the reassurance of long acquaintance with our informants or advisors. It may be hurried and urgent. It may be incredibly haphazard. Doctors are often chosen under circumstances which make it more than ever important that mutual understanding attend their relationship to patients. And so it was my second experience to realize that in Amreica especially, because of its constantly moving population, the layman needs a map of our ways. He needs to be told how we can best help him."

Third: "Lastly an experience of three years ago in the clinicopathological conference room of a

well known medical school. I saw by chance a blackboard lying on its side in apparent neglect. On it were written the percentages for the preceding quarter of postmortem examinations secured on deaths (a) on the private wards and (b) on the public wards; 13 per cent of the private patients who died came to post mortem; 82 per cent of the patients on the public wards came to post mortem. Quite appropriately the table of figures on postmortems was lying on its side, for it bore evidence of neglect of one of the most enlightening and stimulating practices we physicians know—the postmortem examination. We know the postmortem can and does improve our efforts at diagnosis, we know it is the terror of the casual guesser, we know it is a reward to an eager and honest doctor even when it is a stark corrective, we know it increases our competence and knowledge—in sum, we know the postmortem serves as a merciless incentive to the best we have in us as physicians."

"But does the layman know? Let me draw these three experiences together now in the question I wish to ask you: Shall the layman be told this incentive to our best performance? Is it not true that if a layman wishes to get the best possible service from a physician he would be wise to say at the onset of an illness—'Now Doctor, there's one thing I should like to have clear: if worse comes to worst there is to be a post mortem'? I have never heard the layman's interest mentioned in discussions of postmortems. The postmortem examination has been emphasized as a way to advance scientific knowledge, or it has been thought of as a generous concession to the forgivable curiosity of a beloved doctor, or it has been urged as a method without equal in maintaining staff efficiency in hospitals—but I would inquire whether anyone unprejudiced and remote from the event has ever shown the laity where its interests lie in the matter of post mortems? Is it reasonable to tell the layman that the warning of a post mortem might urge and convert an incompetent doctor in time from proud isolation to prudent consultation? Is it reasonable to say that the mention of a post mortem would never lessen the interest of a competent and trustworthy doctor? Is it reasonable to state quite candidly that in the request for post mortems the public has a means of protecting its own interests? To have an understanding with a physician that if death comes an autopsy will follow involves, as it seems to me, no extra risk whatever to the patient. If, as the phrase goes, 'no effort is to be spared to improve the patient's chances' is it not time to have it widely known that the experience shows the practice of post mortems has improved the patient's chances?"

The author concludes: "There is real need for each profession to teach the laity how best to use its services. In America where with increasing frequency doctors' services are called in ignorance of their capacities, the ways of protecting the laity are of importance. Among other means too numerous to mention at this time one simple suggestion is then here offered for your comment: the performance of postmortem examinations, in that it has greatly improved our efforts as doctors, should be known by the laity as an advantage also within their power to demand.

So the essential point is this: do you endorse my view that one simple but powerful piece of advice in his own protection the layman could wisely be given is this—"Explain to whomever you call that if death comes a post mortem will be required"? It may be grim advice—but in the cause of good medicine we do not shirk giving grim advice. It may not be heeded—we have had that experience too. But it can be understood — and because it is in the interest of the patient, the post mortem can change gradually from being hated and feared and avoided to being used and trusted and steadily perfected. We have known similar transitions in the past. Already, as many of you know, the clinicopathological conference is the wonder and admiration of many of our foreign visitors, who see in it a candor and fearlessness altogether to the credit of American medicine."

PLASTIC SURGERY

Edited by
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The Repair of Surface Defects of the Hand. James Barrett Brown, M.D., St. Louis, Mo. Annals of Surgery, Vol. 107, June, 1938, No. 6.

In a very well written and adequately illustrated article the author points out that most of the surface defects about the hands can be repaired by free grafts rather than by pedicle grafts.

If the initial graft is not entirely satisfactory then one may resort to a pedicle type of repair. He points out that where nerve, tendon, bone or joint is exposed or needs to be covered so that motion can take place then pedicle grafts become a necessity.

The author lays down one simple fundamental rule: that when the full thickness of the skin has been lost even over small areas, in such a kinetic region as the hand, the indication for treatment is to restore this loss as completely and as soon as possible. The author warns against methods recommended (as not leaving scars); a great many hands are allowed to heal with permanent crippling as a result.

Fresh Superficial Burns: The author favors wet packs of saline or grease gauze rather than tannic acid or plaster of paris. This allows early recognition of depth and amount of loss of skin. If there has been no full thickness loss of skin early healing usually takes place. The hand should be kept in a position of maximum function during the healing period.

Fresh Deep Burns: The author advises open wet dressings, debridement and later skin graft (free thick split graft).

Late Unhealed Burns: The first problem here is to obtain a clean wound and graft as early as possible. Secondary operations for releasing contractures often are necessary in this type of work.

Late Deformities Repaired with Free, Thick Split-Grafts:

By using about one-half to three-fourths the thickness of the skin, it is possible to remove the scar and supply a suitable graft. In cases where ulceration is present the author employs wet dressings with irrigating tubes incorporated for about four days.

Partial Restoration of Function: Some cases show deformities that are discouraging from the standpoint of satisfactory repair. Improvement in some of these cases is accomplished by restoring position of fingers or thumb and thereby increasing function.

Healed Deformities Repaired with Free Full-Thickness Grafts:

Dorsal surface loss can in many instances be successfully replaced with thick split grafts. The full thickness graft is often relied upon where widespread clean dissection and removal of the binding scar can be accomplished.

Palmar surface losses can nearly always be repaired with free grafts. Some areas may require thick grafts. The author has learned that the single contracted finger in a child with keloid formation, with its probable deep inflammation may be one of the hardest to repair and careful attention must be given this apparently simple

lesion. The author points out the details of using the full thickness graft, the sutures used and the splinting necessary. He also mentions the manner of cutting the graft to pattern and the application of the graft.

Roentgen Ray Burns: The author has had most satisfactory results with excision and immediate grafts with thick split-skin grafts in repairing roentgen ray burns. If ulceration is present or if there is bone or tendon exposed in the fingers, amputations may have to be performed, or a pocket flap resorted to, but with the promise of success by early widespread free-skin grafting, most patients should fall short of this degree of neglect.

Complete Amputation of Finger Tips: The author has had experience in suturing a completely severed finger tip and has found that it lives.

Web Fingers: The author advises preparation for skin graft when dividing these webs. He has found that there is always need for skin to cover the defect.

Discussion: It is a principle that one should bear in mind that Dr. Brown has so often pointed out, viz: Immediate and early replacement of skin loss about the hands. This type of work often requires a long operative time and each detail must be carefully observed, otherwise the whole plan is upset. One must observe strict asepsis, adequate fixation, good splinting, and an early return to function in these cases.

I think most every surgeon has had the experience of suturing an amputated finger tip and finding that it remains viable and functions. I have had such cases in children but never a complete amputation of a finger tip in an adult which survived.

The above article is wholly instructive, thoroughly illustrated and very timely.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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The Treatment of Acute Infectious Arthritis of Undetermined Origin with Artificial Fever. Robert M. Stecher and Walter M. Solomon. Amer. J. of Medical Sciences, CXCIV, 485, 1937.

Acute non-specific infectious arthritis is a relatively common syndrome which has received scant attention in the literature and may be regarded as an acute form of atrophic, rheumatoid, or chronic infectious arthritis.

Of 20 patients, ranging in age from 14 to 51 years, treated with artificial fever therapy, 12 (60 per cent) received prompt relief and apparent cure while eight (40 per cent) were partially relieved. The course of the disease was favorably modified in every case. These results compare favorably with those observed in the treatment of acute gonorrheal arthritis with artificial fever.

Treatment consisted in induced fever (about 105 degrees Fahrenheit) by means of the Kettering hypertherm, maintained usually for four or five hours. The patients who recovered completely received this treatment for from two to 25 hours, averaging seven and three-tenths hours.

Increased circulation, with an increase in phagocytosis, occurs, but the complete mechanism which produces benefit is not fully known. Herpes labialis has been found to occur as a complication of this form of therapy in one-third of the cases after the first treatment only.

Fracturas Supracondileas Infantiles (Supracondylar Fractures in Children). F. Jimeno Vidal. Anales del Servicio de Traumatologia, Cirugia Ortopedica y Accidentes del Trabajo del Hospital Provincial de Valencia, Febrero, 1936.

The great osteogenetic capacity of the infantile periosteum and its tendency to bone proliferation when it is irritated are the chief reasons for the use of gentle manipulations, the postponement of any kind of surgical operation, and the establishment of after-treatment on the lines of uninterrupted rest until bony union takes place. The author warns against removing the splint every two days in order to see "how things are going on," moving the joint, or employing any form of massage.

The fracture is reduced under a local anaesthetic (20 cubic centimeters of a 2 per cent novocain solution). The patient is placed on a table, and the surgeon exerts traction, pulling the forearm flexed at a right angle. Countertraction through a sling, or obtained by placing the surgeon's knee on the patient's axilla, is effective. This causes the shortening to disappear. Digital pressure reduces the forward position of the proximal fragment. The forearm should be held in forced pronation to counteract the varus position and to prevent radial palsy. Fixation is by means of a non-padded plaster-of-Paris splint.

UROLOGY

Edited by D. W. Branham, M.D.
514 Medical Arts Building, Oklahoma City

Present Aspects of Stone Problem by Linwood D. Keyser, Roanoke, Virginia. Urological Correspondence Club. September 5, 1938.

The author of this letter has achieved distinction in his work on urinary calculi. This communication is an admirable criticism of the present day concept of calculosis of the urinary tract by an authority on this disease. It is well worth reading.

"We still possess an insufficient tangible knowledge of the cause and prevention of calculous disease in the urinary tract. This is true in spite of numerous interesting and brilliant endeavors on the part of investigators during the 20-year period which has elapsed since Osborne, Mendel and Ferry reported their epoch making observation of lithiasis in rats fed on diets deficient in vitamin A.

It is really remarkable what a variety of methods have been successful in producing calculi in experimental animals. Noteworthy are artificial hyperexcretion of stone forming crystalline material, infection and vitamin deficiency. It is equally remarkable and altogether disappointing that we cannot in a practical manner carry the fruits of these experimental efforts more intelligently to the clinical field.

For instance, artificial hyperexcretion of calcium oxalate and carbonate will produce calculosis in animals. Clinically hyperparathyroidism with its concomitant excessive urinary calcium excretion is found frequently associated with stone. In hyperthyroidism, however, while the calcium excretion is again excessive, the incidence of stone is insignificant. Why the difference? Similarly urinary tract infections and malnutrition states of vitamin deficiency type are very inconsistent in their association with lithiasis. The same type of infection and of malnutrition are found far more often without calculous disease than with it.

Much has been written on the geographic incidence of lithiasis and its bearing on the malnutrition factor. Enthusiastic research workers in

vitamin insufficiency have drawn quick and far reaching conclusions. Let us remember, however, that in the stone areas of India, China and Dalmatia, it is bladder stones chiefly in male children that are being considered. No figures exist to show that renal or ureteral lithiasis in such areas is excessive, while children in neighboring communities on a similar dietary and in a similar climatic environment may be strangely free from bladder stone.

Little has been added to our knowledge of the dissolution of calculus, or prevention of recurrence beyond what we knew years ago. Methods of dissolution relying on changing the urinary reaction, administration of vitamins and drugs have not been successful in the hands of the great majority of workers. It is true that dissolution may occur not infrequently with soft calcareous masses, recently formed and in which secondary internal crystallization, i.e., the compaction of the colloid-crystalline framework into laminated areas with consequent increased density, has not taken place. The effort at dissolution has no place in vesical calculi. Indeed, small stones in calyces or ureter, non-obstructing and subsequently found to be composed of phosphate or carbonate, have almost consistently refused to yield to urinary acidification over many months. When we set out to dissolve a stone, the chances are very, very greatly in favor of failure. There is a reason for this. In the test tube I have found that stones of varying density exposed to concentration of various acids not tolerated by the urinary mucosa, suffer only slight disintegration on the surface. The colloid-crystalloid framework is unyielding and we must look for further measures to cause its breakdown.

In preventing recurrence, the change of urinary reaction and perhaps the forcing of vitamins may be of great value, but is in general secondary to the attack to be made on infection, especially of proteus and coccal types. The oxalate stone remains an enigma. Prevention of hyperexcretion of uric acid by dietary means, the occasional recognition of hyperparathyroidism and its surgical treatment are noteworthy procedures. Intense eradication of focal infection and of urostasis are emphasized as all important.

A newer line of approach suggested by Snapper, Bendein and Polak of Amsterday is worthy of recording. These observers produced calculi in rats by feeding calcium carbonate and later found that such calculosis was prevented when excessive hippuric acid in the urine was produced by concomitantly feeding sodium benzoate and glycocoll. Hippuric acid has a hydrotrophic action on the labile urinary colloids, keeping them in solution. Without precipitation or gelling of these colloids, stone will not form, regardless of vitamin deficiency or of H-ion concentration.

My experience with these drugs is limited. Three cases of phosphaturia and small gravel have cleared up shortly after administration of 45 to 60 grains of sodium benzoate and 1 to 2 oz. of Elixir of Glycocoll daily.

Similarly a patient with mixed streptococcus and proteus infection who had been afflicted with frequent passage of phosphatic ureteral calculi over a 16-year period has been free from recurrence over seven months with a crystal free urine and a slowly but definitely subsiding infection. An autogenous bacterial antigen made from the proteus was used and has seemed of great value in reducing the infection. Little effort has been made at changing the urinary reaction in this case. Sulfanilamide and di-sulfanilamide both have resulted in diminishing the proteus infection, but only temporarily if used alone. Ureteral and urethral dilatations and prostatic massage are being carried out. By such a "therapeutic barrage" we are whipping the infection down to a minimum, keeping the urinary tract well drained, and apparently inhibiting further formation of stone. The possible role of the benzoate and glycocoll regimen is not clear but is mentioned as a suggestion that these drugs may be used in conjunction with other measures in instances of rapidly recurrent stone, which have proved obstinate.

In resume, our clinical methods of dealing with stone are based largely on empirical methods. What we have learned from experimental sources leads us to believe that the process is intimately bound up with the deposition of calcium or other urinary crystalloids in necrobiotic epithelium on the one hand with a disturbance of colloid-crystalloid solution equilibrium on the other. The tangible details of these processes themselves are obscure. Evidence, however, is gradually accumulating which is suggestive of a better understanding of the problem in the future. An excellent survey of the subject of lithiasis, etiologic factors and blood chemistry relationships is recounted in the current article by Griffin, Osterberg and Braasch (Jr. A.M.A.)."

Air Filtration

According to Tell Nelson, Chicago (Journal A. M. A., Oct. 1, 1938), air filtration implies the removal of impurities, usually in the form of dust, from the air. The benefits derived from such treatment of the air are of great importance in industry as well as in the control of many respiratory diseases. No air is free from dust. The concentration of dust particles in the air depends on the conditions operative in the locality in which samples are taken. The direct effect of dusts on health depends to a large extent on their chemical composition and the size of the particles. In persons who are sensitized to pollens, inhalation of air impurities precipitates symptoms of hay fever and pollen asthma. The concentration of pollen in the air varies greatly in different localities and is often enormous. In Chicago, for example, it has been shown that hundreds of tons of ragweed pollen are liberated each season. Many mechanical devices have been built for removing dusts from the air. However, because of the large variety of dusts, their difference in size and chemical composition and the varying conditions under which they are found, there is no single filtration method which is applicable to all. The main object is to remove as nearly 100 per cent of the dust as is possible. Air cleansing may be accomplished in numerous ways. In general the methods can be roughly grouped into five main divisions: air washers (water sprays), dry filters, viscous coated filters, electrical precipitators and dynamic precipitators. Each method has a definite field of usefulness and when used within its own limitations attains its maximal efficiency. In industry, the dynamic and electrical precipitators are perhaps the most efficient for the removal of the smaller particles of dust, whereas for home and hospital use dry filters are most efficient. The air washer for the removal of dust and pollen from air does not have as high a degree of efficiency as other methods. The greatest field of usefulness of the air washer is as a primary cleaner in a system in which there is a secondary filter of greater efficiency. In this capacity it will remove the larger particles and thus give a longer life to the secondary filter in addition to maintaining or increasing the humidity. Dry filters are well adapted for installation in hospitals and homes where filtration is required. Their efficiency is at its maximum when the filter is new. When properly cared for under ordinary operating conditions, the loss in efficiency of dry filters is very slight. Viscous coated filters have their lowest efficiency for dust arrestment when new, but as the filter fills with dust the efficiency increases. Electrical precipitators have lately been advocated for use in the removal of dust and pollen from the air. They maintain a high degree of efficiency for dust removal. This method is efficient for particles

smaller than 0.5 micron. Its disadvantages for home and hospital use are that it may liberate ozone, which at times may produce secondary effects, and it requires constant operation to maintain its efficiency. Dynamic precipitators usually combine an exhauster and dust collector in a single unit. The dynamic precipitator has a very high degree of efficiency for dust removal as the result of the magnitude of the centrifugal and dynamic forces imparted to the dust particles by the impeller. Within the past ten years, filtration of air for the removal of particulate matter has received a great deal of attention from the medical profession. This has been particularly true in the field of allergy. Its usefulness in the relief of symptoms of hay fever and pollen asthma and in other inhalant allergies as well as its value as an aid in diagnosis has been amply demonstrated.

Physical Therapy In Treatment of Fractures

In order that physical therapy may be intelligently used in the treatment of fractures, Frank D. Dickson, Kansas City, Mo. (Journal A.M.A., Sept. 10, 1938), defines its purposes and aims to be: (1) promoting the early absorption of hemorrhage and traumatic exudate, (2) relaxation of muscular spasm to relieve pain and discomfort, (3) the reestablishment of normal circulatory conditions in the affected extremity, blood stream and lymphatics, which insures a more rapid and complete healing of the fracture and (4) building up in the muscles of the extremity that tone and flexibility so necessary to normal use. Broadly speaking, there are four basic forms of physical therapy which may be employed in the treatment of fractures to accomplish the purposes catalogued; they are heat, massage, exercise and muscular stimulation. The first two of these secure their effect by bringing about muscular and vascular relaxation; the third and fourth are of chief importance in promoting venous and lymphatic flow and preparing the muscles to resume their normal active role as soon as use may be safely permitted. Physical therapy plays but a minor role in the reduction period. However, when for any reason it is impossible to proceed with the immediate reduction of a fracture, even if the delay is but a few hours, heat and gentle massage may be used to advantage. In the postreduction period physical therapy should assume an important role in fracture treatment, but unfortunately it is durnig this period that it is most neglected. It is in the immediate postreduction period that exudate and hemorrhage which will become organized into scar tissue about the muscles, tendons, vessels and nerves and interfere with muscle action, normal circulation and joint movement can largely be removed by restoring as early as possible normal circulatory efficiency to the part. The stiffness, soreness and impaired function following a fracture are due in large part to such scar tissue and its removal or at least reduction to a minimum lessens the discomfort incident to restoring function and materially shortens the period of convalescence. Delayed union and nonunion are in the main traceable to interference with circulation at the site of the fracture so that early restoration of circulatory efficiency is the best safeguard against these catastrophes. So-called open splinting has in recent years been used more and more in the fixation of fractures; this permits the employment of physical therapy to a satisfactory extent. If a circular plaster dressing is used, it may be bivalved and the halves removed alternately for the application of physical therapy. In addition to "setting" muscles in this postreduction period, active muscle contraction may be encouraged in several ways. Even with the forearm and arm encased in a plaster cast, if the fingers are free, the patient by squeezing and relaxing the grip on a rubber sponge can exercise the forearm and arm muscles extensively. It is in the period of after-care that physical therapy is most generally used in fracture treatment. In seeking to help a patient to regain voluntary control of the muscles and joints following a fracture, heat and massage should be used to loosen up and render more pliable muscles and so reduce the stiffness and pain incident to attempts at movement. The movements which are used should be designed to bring about normal action of the joint in the most natural manner. Having the patient go through the motions of brushing the hair in elbow fractures, driving nails with a light hammer in fractures of the wrist, turning a door handle in fractures of the forearm, and reaching for objects placed at a gradually increased height in shoulder fractures illustrate the methods which may be used to encourage the patient to use the extremity in a normal manner. Physical measures may be used up to the point of pain tolerance provided the painful reaction subsides within an hour or two. Physical therapy which produces painful reaction and muscular spasm that persist until the next treatment indicates too forceful or too prolonged treatment and both amount and duration must be reduced; persistence can lead only to resistance on the part of the patient, slowing up of recovery, and a disappointing result.

Osteomas of Paranasal Sinuses and The Mastoid Process: Report of Cases

Bert E. Hempstead, Rochester, Minn. (Journal A.M.A., Oct. 1, 1938), points out that osteomas that arise in the paranasal sinuses are not common. Occasionally they are discovered in routine roentgenologic examination of the sinuses. They are not diagnosed clinically or even suspected of being present until either evidence of intracranial complications becomes manifest or external deformities appear. Most osteomas can be removed through the fronto-ethmoidal incision. If osteomas do not involve the dura or cribriform plate, removing them by the method of Cushing is illogical. Pyocele or mucocele of the sinuses can be handled best through the fronto-ethmoidal incision. Osteomas associated with intracranial complications are cared for best through the transfrontal approach. If osteomas are associated with intracranial complications and with definite infection of the sinuses, operation might be done in two stages with advantage.

Vitamin C: Methods of Assay and Dietary Sources

The facts and comments presented by Otto A. Bessey, Boston (Journal A.M.A., Oct. 1, 1938), in this review on the methods of assaying vitamin C serve to give a general idea of the present state of the subject. Chemical methods have rapidly replaced vitamin C determinations by bio-assay for many types of investigations. However, the more specific animal tests continue to be necessary in order to avoid the risk of misinterpretations of the chemical tests. Guinea pigs kept on certain purified diets fail to gain weight, and the specific pathologic changes of scurvy develop. The degree of protection or cure of the deficiency bears a quantitative relation to the amount of vitamin administered. This principle forms the basis for biologic methods of vitamin C analyses. The dietary sources of vitamin C are discussed, a table of various foods with their vitamin C content is presented and the effect on the retention, diminution or loss of vitamin C by the different methods of preparing and preserving food is also discussed.

Human Requirements For Vitamin B-1

For the ideal type of information needed to answer the question of the human requirement for Vitamin B-1 it was of course necessary to await isolation of the factor in pure form and tests of it on the human species, something ac-

complished only recently. It has not as yet been possible to make as many tests with the pure vitamin as might be desired, but these may reasonably be expected in the near future. George R. Cowgill, New Haven, Conn. (Journal A.M.A., Sept. 10, 1938), presents a formula which indicates that the value of the vitamin B-1:calory ratio increases with increase in body weight. Estimates of the human requirement for vitamin B derived from his formula pertain to the minimum or beriberi-preventing level; the optimal intake is undoubtedly much greater. The vitamin B-1 requirements for th enormal adult, the mother and the infant and the child are discussed and computed. Heightened metabolism and loss through excretory channels are some of the clinical factors that influence the vitamin B-1 requirement.

Relation of Drug Therapy To Neutropenic States: Chairman's Address

In 1931 the first evidence was presented that agranulocytosis was caused by the administration of certain drugs. Since that time there have accumulated a large amount of confirmatory data and reports of experiments that this concept is correct. Roy R. Kracke, Emory University, Ga. (Journal A.M.A., Oct. 1, 1938), summarizes this evidence and makes further suggestions concerning the use of some of these drugs, particularly since new preparations are benig introduced constantly and at least one of them (sulfanilamide) can be definitely added to the list of offenders. The drugs known to have produced agranulocytosis are aminopyrine, dinitrophenol, antipyrine, derivative of aminopyrine (novaldin) and sulfanilamide; acetanilid, acetophenetidin (Phenacetin), cinchophen (atophan), antimony compound (neostibosan) and quinine are suspected of causing agranulocytosis; arsphenamine depresses the granulocytes, and gold salts depress the hematologic system and they are thought to produce agranulocytosis. The disease has practically disappeared from Denmark because aminopyrine is no longer used in that country. Approximately 80 per cent of the drug-produced agranulocytosis is caused by the administration of aminopyrine or one of its compounds, with a lesser percentage being caused by the other drugs. The disease is decreasing in incidence in the United States, probably because of the more cautious use of aminopyrine by the medical profession. The number of cases of agranulocytosis from the use of sulfanilamide will probably increase ni the future, particularly if this drug is incorporated in patented remedies and indiscriminatingly sold to the public under nonrevealing names. Physicians should attempt to prevent this disease by caution in the use of these drugs, by instruction of patients concerning their purchase in drug stores and by programs of public instruction.

Apnea of The Newborn and Associated Cerebral Injury: Clinical and Statistical Study

According to Frederic Schreiber, Detroit (Journal A.M.A., Oct. 1, 1938), from January 1, 1928, to Decembre 31, 1937, 685 patients were seen in whom a relationship was suspected between the manner of birth and the later neurologic manifestations of damage to the brain. Most of these patients were seen at the Children's Hospital of Michigan, Detroit. Of the 685 children, 131 were seen because of convulsions, 69 because of spasticity, 130 for mental retardation, 248 because of combinations of these symptoms and the remaining 107 for miscellaneous neurologic conditions. Cases subject to suspicion of postnatal infection or trauma were excluded from the group, as were those in which congenital or familial factors might have significance in cerebral symptomatology. Finally, the group was limited to those infants born in one county during the ten year period. These restrictions left 500 cases. Approximately 70 per cent of these patients, whose birth records were available, had a history of apnea. There was a history of precipitate, brech, twin or premature delivery for 155 of the 500 infants; 345 were full term infants. In those of the group of 155 about whom data were obtainable, approximately 64 per cent had apnea at bithr, 11 per cent had late apnea only and 18 per cent had both early and late apnea. The total incidence of apnea in this group was 72 per cent. In the group of 345 full term infants, the incidence of apnea in the cases presenting a known history was at birth, 62 per cent; late, 9 per cent; early and late, 17 per cent, and total, 69 per cent. The depressing effect, on the respiratory center, of birth analgesics given in greater than pharmacologic doses bears a direct relationship to the degree of apnea. The extent of the apnea has a direct relationship with the severity of the cerebral symptoms after birth. The severity of the cerebral symptoms is in direct relation to the amount of damage to the brain tissue. From these relationships it apepars that analgesics given in greater amounts than the pharmacologic dosage may in many instances be the causative factor of fetal anoxemia, with resultant cerebral damage in the infant.

Index to Advertisers

American Can Company xxxii

Balyeat Hay Fever and Asthma Clinic iii
Beverly Hills Sanitarium v

Caviness Surgical Company vi
Classified Ads xviii
Coca-Cola viii
Cook County Graduate School of Medicine xxvii
Corn Products Sales Co. xiii

Davis & Company, F. A. xiv
Dr. Moody's Sanitarium xxvii
Dr. White's Sanitarium xxiii
Duke Sanitarium ..... Inside Back Cover

Eli Lilly and Company xvi

First Texas Chemical Company vi

Goldfain Rheumatism-Arthritis Research Laboratory iii
Grandview Sanitarium xxi

Hynson, Westcott & Dunning, Inc. iv

International Medical Assembly xxv

Lain-Eastland Clinic ..... Front Cover
Lederle Laboratories ix
Luzier's, Inc. x

Major Clinic xv
Mead Johnson & Company xxxi
Medical Arts Laboratory ..... Inside Front Cover

Neurological Hospital xvii

Oakwood Sanitarium xxiii
Optical Service Company xvii

Parke, Davis & Co. xix
Pearson School iv
Petrolager Laboratories, Inc. xviii
Philip Morris & Co., Ltd., Inc. xi
Physicians Casualty Association—Health Association xxvii
Physicians Directory ..... xxii-xxiv-xxvi-xxviii-xxx
Polyclinic Hospital xxi

Ralph Sanitarium xvii
Reconstruction Hospital and McBride Clinic v

Smith, Kline & French Laboratories ..... vii-xxix
Smith-Dorsey Company xv
Southern Medical Association ..... Back Cover
Springer Clinic xxvii

Terrell's Laboratories ..... Front Cover
Timberlawn Sanitarium viii
Trowbridge Training School iv
Tulane University xviii

Von Wedel Clinic ..... Inside Back Cover

U. S. Standard Products Co. xxv

Wallace Sanitarium xxvii
Woodcroft Hospital xxi

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Dr. W. S. Larrabee.....Tulsa
Dr. J. M. Watson.....Enid
Dr. T. H. McCarley.....McAlester

STANDING COMMITTEES 1938-39

Medical Defense: Dr. O. E. Templin, Chairman, Alva; Dr. L. C. Kuyrkendall, McAlester; Dr. E. Albert Aisenstadt, Picher.

Medical Economics: Dr. C. B. Sullivan, Cordell, Chairman; Dr. J. L. Patterson, Duncan; Dr. W. M. Browning, Waurika.

Medical Education and Hospital: Dr. V. C. Tisdal, Chairman, Elk City; Dr. Robert U. Patterson, Oklahoma City; Dr. H. M. McClure, Chickasha.

Public Policy and Legislation: Dr. Finis W. Ewing, Surety Bldg., Chairman, Muskogee; Dr. Tom Lowry, 1200 North Walker, Oklahoma City; Dr. O. C. Newman, Shattuck.

(The above committee co-ordinated by the following, selected from each councilor district.)

District No. 1.—Arthur E. Hale, Alva.
District No. 2.—McLain Rogers, Clinton.
District No. 3.—Thomas McElroy, Ponca City.
District No. 4.—L. H. Ritzhaupt, Guthrie.
District No. 5.—P. V. Annadown, Sulphur.
District No. 6.—R. M. Shepard, Tulsa.
District No. 7.—Sam A. McKeel, Ada.
District No. 8.—J. A. Morrow, Sallisaw.
District No. 9.—W. A. Tolleson, Eufaula.
District No. 10.—J. L. Holland, Madill.

Scientific Exhibits: Dr. E. Rankin Denny, Chairman, Tulsa; Dr. Robert H. Akin, Oklahoma City; Dr. R. C. Pigford, Tulsa.

Scientific Work: Dr. W. G. Husband, Chairman, Hollis; Dr. J. S. Rollins, Prague; Dr. J. L. Day, Supply.

Public Health:
Chairman—Dr. G. S. Baxter, Shawnee.

District No. 1.—C. W. Tedrowe, Woodward.
District No. 2.—E. W. Mabry, Altus.
District No. 3.—L. A. Mitchell, Stillwater.
District No. 4.—J. J. Gable, Norman.
District No. 5.—Geo. S. Barber, Lawton.
District No. 6.—C. E. Bradley, Tulsa.
District No. 7.—G. S. Baxter, Shawnee.
District No. 8.—M. M. De Arman, Miami.
District No. 9.—T. H. McCarley, McAlester.
District No. 10.—J. B. Clark, Coalgate.

SCIENTIFIC SECTIONS

General Surgery: Dr. F. L. Flack, Chairman, Nat'l Bank of Tulsa Bldg., Tulsa; Dr. John E. McDonald, Vice-Chairman, Medical Arts Bldg., Tulsa; Dr. John F. Burton, Secretary, Oaler Building, Oklahoma City.

General Medicine: Dr. Frank Nelson, Chairman, 603 Medical Arts Bldg., Tulsa; Dr. E. R. Musick, Vice-Chairman, Medical Arts Bldg., Oklahoma City; Dr. Milam McKinney, Medical Arts Bldg., Oklahoma City.

Eye, Ear, Nose & Throat: Dr. E. H. Coachman, Chairman, Manhattan Bldg., Muskogee; Dr. F. M. Cooper, Vice-President, Medical Arts Bldg., Oklahoma City; Dr. James R. Reed, Secretary, Medical Arts Bldg., Oklahoma City.

Obstetrics and Pediatrics: Dr. C. W. Arrendell, Chairman, Ponca City; Dr. Carl F. Simpson, Vice-Chairman, Medical Arts Bldg., Tulsa; Dr. Ben H. Nicholson, Secretary, 300 West Twelfth Street, Oklahoma City.

Genito-Urinary Diseases and Syphilology: Dr. Elijah Sullivan, Chairman, Medical Arts Bldg., Oklahoma City; Dr. Henry Browne, Vice-Chairman, Medical Arts Bldg., Tulsa; Dr. Robert Akin, Secretary, 400 West Tenth, Oklahoma City.

Dermatology and Radiology: Dr. W. A. Showman, Chairman, Medical Arts Bldg., Tulsa; Dr. E. D. Greenberger, Vice-Chairman, McAlester; Dr. Hervey A. Foerster, Secretary, Medical Arts Bldg., Oklahoma City.

STATE BOARD OF MEDICAL EXAMINERS

Dr. Thos. McElroy, Ponca City, President; Dr. C. E. Bradley, Tulsa, Vice-President; Dr. J. D. Osborn, Jr., Frederick, Secretary; Dr. L. E. Emanuel, Chickasha; Dr. W. T. Ray, Gould; Dr. G. L. Johnson, Pauls Valley; Dr. W. W. Osgood, Muskogee.

STATE COMMISSIONER OF HEALTH

Dr. Chas. M. Pearce, Oklahoma City.

COUNCILORS AND THEIR COUNTIES

District No. 1: Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Dewey—Dr. O. E. Templin, Alva. (Term expires 1940.)

District No. 2: Roger Mills, Beckham, Greer, Harmon, Washita, Kiowa, Custer, Jackson, Tillman—Dr. V. C. Tisdal, Elk City. (Term expires 1939.)

District No. 3: Grant, Kay, Garfield, Noble, Payne, Pawnee—Dr. A. S. Risser, Blackwell. (Term expires 1938.)

District No. 4: Blaine, Kingfisher, Canadian, Logan, Oklahoma, Cleveland—Dr. Philip M. McNeill, Oklahoma City. (Term expires 1938.)

District No. 5: Caddo, Comanche, Cotton, Grady, Love, Stephens, Jefferson, Carter, Murray—Dr. W. H. Livermore, Chickasha. (Term expires 1938.)

District No. 6: Osage, Creek, Washington, Nowata, Rogers, Tulsa—Dr. James Stevenson, Medical Arts Bldg., Tulsa. (Term expires, 1938.)

District No. 7: Lincoln, Pontotoc, Pottawatomie, Okfuskee, Seminole, McClain, Garvin, Hughes—Dr. J. A. Walker, Shawnee. (Term expires 1939.)

District No. 8: Craig, Ottawa, Mayes, Delaware, Wagoner, Adair, Cherokee, Sequoyah, Okmulgee, Muskogee—Dr. E. A. Aisenstadt, Picher. (Term expires 1939.)

District No. 9: Pittsburg, Haskell, Latimer, LeFlore, McIntosh—Dr. L. C. Kuyrkendall, McAlester. (Term expires 1939.)

District No. 10: Johnson, Marshall, Coal, Atoka, Bryan, Choctaw, Pushmataha, McCurtain—Dr. J. S. Fulton, Atoka. (Term expires 1939.)